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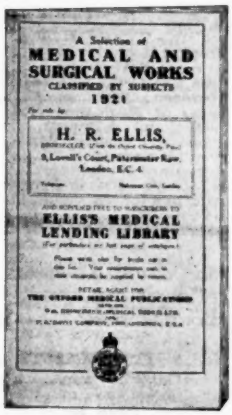

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CHRONIC INTESTINAL STASIS.

In the short time at my disposal it will be impossible to recapitulate, however briefly, what I have written during the last 20 years on chronic intestinal stasis, its causation and symptoms, since the subject has developed so much in that time. I have attempted to summarise it in two recent papers published in THE LANCET, The Evolution of Disease[1] and The Operative Treatment of Cancer of the Colon,[2] to which I would refer you for further details. Suffice it to say that the delay in the passage of the fæcal matter, which produces its earliest result in the pelvic colon, extends along the length of the large bowel and tends to distend, dilate, and prolapse the cæcum and the ascending and transverse segments of the colon.

In consequence of the stagnation of the contents of the large bowel mechanical changes take place in the rest of the gastro-intestinal tract. Associated with these there is an ascending infection of the originally sterile contents of the small intestine and duodenum, which results in a contamination of the food-supply of the individual by micro-organisms. The products resulting from the fouling of the intestinal chyme, the material from which the body obtains its nourishment, are absorbed into the circulation. A proportion escapes conversion or excretion in the liver and kidneys and produces a degenerative change in every tissue. This deleterious matter also throws an excessive strain upon the excretory and ductless glands, so that the latter undergo variations in structure and function. Organisms such as *Bacillus coli*, &c., may get into the blood stream. This condition, due to infection of the contents of the small intestine, I called intestinal auto-intoxication, which term, perhaps, describes it as well as any other. Too much importance cannot be attached to this result of chronic intestinal stasis, since upon it directly or indirectly depend the innumerable changes which take place in the body and which are called diseases. It is the disastrous consequence of simple stasis. The degenerative changes in such organs as the breast, ovary, uterus, pancreas, &c., are very liable to terminate in cancer.

I have fully described the effects of the toxins and organisms on the fat, muscle, cerebro-spinal system, circulatory system, thyroid, adrenal, pituitary, skin, uterus, ovaries, testes, kidneys, liver, and pancreas. The effect on these several structures is the result of the septic infection of the blood stream in which they are bathed and from which their component cells derive their nutrition. In the case of the liver and pancreas there is an added source of infection through the ducts of these organs.

MEDICAL TREATMENT.

Up to a certain point medical treatment may avail to stem the degree and effects of auto-intoxication. It consists in efforts to empty the large bowel by purgatives or by enemas, massage, electricity, and exercise; to sterilise the contents of the small intestine by the use of organisms, vaccines, and antiseptic drugs which exert an inhibitory or deleterious effect on the microbes which have invaded the small intestine, such as the Bulgarian bacillus, mercury, arsenic, iron, &c.; by giving such foods as break up easily and rapidly, and either remain in the small intestine for a short time or do not decompose if retained for an abnormal period; by avoiding all such forms of meat as take long to be digested, and so favour their decomposition; and by the use of large quantities of water which flush the intestinal tract and carry away effete products by the kidneys, &c. In the so-called water cures the essential factor in any success that may attend the treatment is the flushing of the intestine and circulation by the water, the salts playing a very secondary part.

One must realise that stasis commences early in the life-time of the individual. It is probable that when the napkin is discarded, and the infant is habituated to a single daily action, the pelvic colon, being unable to accommodate the amount of nourishment taken during 24 hours, gradually elongates or becomes fixed and obstructed by the formation of controlling bands or membranes. Once a mechanical disability to the evacuation of the fæcal contents arises in the end of the large bowel the sequence of events is inevitably progressive. Its rapidity varies with the vitality of the individual. In treating a case of stasis, whether chiefly mechanical or toxic in character, every means should be adopted as early in life as possible to stay the progress of the changes by diet, the more frequent evacuation of the bowel by the use of paraffin, by rest at suitable intervals, &c.

Indications for Colectomy.

If the symptoms are accentuated by bands, inflammation of the appendix, control of the ileal effluent by an anchored appendix, by obstruction at the duodeno-jejunal junction, or by the presence of duodenal or gastric ulcers surgical measures must be resorted to at once.

When all these means have failed to stay the progress of the disease what is to be done? It is absolutely necessary that the infection of the contents of the small intestine be eliminated, and while the obstruction to the free flow of the ileal contents exists in the form of a mechanically disabled and inflamed large intestine there is nothing left but to remove that diseased and obstructing structure. It is not an operation that should be undertaken lightly; it can only be considered when all other means have proved unsuccessful. The choice is between folding one's hands and watching or taking action which if successful affords the patient incalculable advantages. The necessity for this action is frequently accentuated by the fact that the lowered vitality of the tissues and the diminution of their resisting power make them a prey to organisms which may invade and obtain a foothold in them. It would appear that the organs or tissues most liable to degenerative change as well as the resisting power to the several kinds of organisms are not the same in different individuals, families, and groups, and vary in the same individual at different ages. While in the child the lymphatic tissue of the naso-pharynx is very prone to suffer, later in life the gums form a common seat of infection. The condition of the gums which is called pyorrhœa is perhaps the most frequent and obvious, as well as being one of the most important, examples of infection of devitalised tissues by organisms, not in itself necessarily calling for other than local treatment. Pyorrhœa when fully developed becomes, as do many other secondary inflammations, an additional source of infection of the system, and may seriously aggravate existing symptoms or be the source of new diseases. This is sometimes so marked that casual observers have been led to regard pyorrhœa as the primary factor in producing many diseases, and even in determining the changes in the gastro-intestinal tract. This is not the case, though, as I have indicated, pyorrhœa may become a secondary factor of considerable importance and may aggravate existing infection of the intestinal contents.

DISEASES ORIGINATING IN AUTO-INTOXICATION.

It is difficult to limit the number of diseases which depend directly or indirectly for their existence on auto-intoxication, for some of which colectomy may be performed with great benefit.

[1] THE LANCET, 1919, ii., p. 1117. [2] THE LANCET, 1920, ii., p. 1184.

The most frequent and obvious are rheumatoid arthritis, Still's disease, tubercle, Bright's disease, non-specific arteritis obliterans, Raynaud's disease, Addison's disease, melancholia, dementia præcox, disseminated sclerosis, pernicious anæmia, paralysis agitans, asthma, atheroma, infective endocarditis, angina pectoris, many forms of skin disease as pruritus, &c., ulcerative colitis, exophthalmic goitre, adenoma of the thyroid, microbic cyanosis, diabetes mellitus, and neuralgias. There are a host of other conditions which I might enumerate, cancer being the last and not the least important; but for cancer colectomy is useless except when the growth involves the large bowe primarily.

As regards surgical measures, assuming that an ileal kink or a controlling appendix does not exist, or has already been dealt with, that any definite obstruction of the large bowel by band has been divided, and that any angulation at the duodeno-jejunal junction sufficiently acute to necessitate a gastro-enterostomy has been treated, what means have we got of removing this obstruction to the ileal effluent? To deal with this effectually one must bear in mind that it starts primarily in the elongated and dilated pelvic colon, it may be accentuated or not at the last kink, it extends along the iliac, descending, and transverse colon, and is often aggravated by spasm consequent on an inflammation of the mucous membrane, commonly called colitis. The cæcum and ascending colon are usually distended with the intestinal contents, dammed back by this obstruction, whether produced by constriction by acquired bands or by great elongation of the bowel with associated inflammation of its mucous lining producing spasm of the muscle wall, while the dilated and prolapsed cæcum, falling to the bottom of the pelvis, may become so displaced as to twist and obstruct the terminal ileum, as Dr. A. C. Jordan has shown so clearly. While colectomy is urgently called for in many conditions which result directly from intestinal auto-intoxication, it is even more imperatively demanded in the case of those diseases which can only develop in a subject in whom the vitality and resisting power of the tissues have been sufficiently depreciated by stasis to allow of their being invaded and occupied by deleterious organisms.

METHOD OF OPERATION.

The method I employ in performing colectomy is the division of the ileum at a convenient point several inches proximal to its termination and the removal of the large bowel, leaving only enough pelvic colon to permit of a perfect end-to-end junction with the extremity of the ileum.

In most cases—more frequently in women, in whom the acquired bands are not usually as well developed as in men—this operation offers no special difficulty, but if the acquired membranes are strong it is important that the surgeon should be perfectly familiar with their arrangement, especially about the splenic flexure. I believe it is due to the trouble that many have experienced in dealing with this flexure that recourse has been had to the futile operation of removing the cæcum, ascending, and portion of the transverse colon. Many years ago I employed this method of partial resection, but discarded it at once on recognising its inefficiency to relieve the patient of the obstruction in the second half of the large bowel, for the relief of which an operation was performed.

There is one practical point of great interest in connexion with these operations. In the earlier colectomies I divided the pelvic colon at a point that enabled me to form a lateral anastomosis between the closed ends of the ileum and colon. The disappearance of symptoms followed this operation very rapidly, and the patient soon got quite well. After an interval of months or years the symptoms occasionally recurred, to my great disappointment. As an infection of the food-supply was evidently the original factor in the development of the particular disease I again explored the abdomen, and found that besides a considerable elongation of the residual pelvic colon, due to its insufficiently frequent evacuation, extensions of the colon and ileum had grown upwards and downwards, and that in these diverticula the contents of the bowel collected, decomposed, and interfered with the free effluent from the ileum. On cutting out this junction and taking away the excess of pelvic colon, together with the protruding large dilated ends of the colon and ileum, symptoms disappeared as before. This decided me to give up establishing a lateral junction and to put the divided extremity of the ileum directly into that of the pelvic colon. There is no difficulty whatever in connecting the end of the ileum with that of the pelvic colon, however different their calibres, if the sutures are radiated in such a manner as to include correct proportions of the circumference of each bowel. It is not necessary, nor is it advantageous, to attempt to increase the calibre of the bowel by splitting it or cutting it obliquely, as has been recommended. Such methods are liable to alter the relations of the long axes of the segments of bowel to one another, and to favour angulation and obstruction at the junction.

Complications following Colectomy.

A case of Still's disease on which I operated provided an excellent illustration of some of the complications which may follow a colectomy. It also proved the necessity of watching for a recurrence of any symptom and dealing with it at the earliest possible moment. It represents the kind of case in which colectomy in inexperienced hands may not ensure the permanent cure that should fairly be expected from it. The first operation undertaken in the case was an ileo-colostomy. It was followed by a freedom from symptoms for nearly nine months, after which some evidences of the disease reappeared. A colectomy was then performed. It was imperfect in the light of our present experience, since a lateral junction, not an end-to-end connexion, was effected. It gave a complete freedom from any joint infection for six years. The recurrence of symptoms which then appeared were met successfully by perfecting the colectomy, the dilated ends with the lateral junction and a length of the recently elongated pelvic colon being excised and replaced by an end-to-end junction; the importance of the frequent evacuation of the bowel was impressed on the patient.

I have referred to this case to indicate some of the complications which may arise in connexion with colectomy. In a certain small proportion of colectomies that escape from observation for a considerable time symptoms of obstruction or a recurrence of the disease may occasionally occur. I refer to such conditions as exophthalmic goitre, rheumatoid arthritis, epileptiform tic, Still's disease, Raynaud's disease, and some others in which, after an apparently magical cure, a relapse may take place months or years after; much disappointment may then be experienced, the patient having been delighted with the effect of the colectomy.

The two complications which are liable to affect this operation disadvantageously are obstruction from inflammatory adhesions and obstruction from excessive elongation of the pelvic colon. The latter is avoided by evacuating the residual colon three times a day. The former can only be met by operative interference. The chief immediate risks of the operation are hæmorrhage, damage to bowel, and possibly shock. The former is most liable to take place in a fat patient, as a vessel embedded in fat may bleed after an interval of time, even if the ligature surrounding it appears to be very tight. This accident may be avoided by forcibly compressing the mesentery before the ligature is applied. Care must be taken to avoid damage to the duodenum, which in many cases is intimately associated with the ascending colon. Precautions are also necessary in ligaturing the mesentery of the colon where it is short and tight. It is quite possible to include a portion of the large bowel in the ligature unless care is taken to avoid such an accident, especially in the neighbourhood of the splenic flexure.

Avoidance of Shock by Saline.

Of course, if a patient is in an almost moribund condition at the time of the operation death may ensue very soon after, but this has not occurred in my practice. The complete freedom from shock is due, I believe, to the fact that ever since I saw L. C. Wooldridge's experiment of replacing the loss of blood

by normal saline I have in all these operations introduced six or seven pints of this solution into the axillæ, starting the injection as soon as possible after the commencement of the anæsthetic. In the earliest cases the fluid was injected directly into the venous circulation. Wooldridge kept no record of this experiment, which I published after his death in THE LANCET under the heading of a Surgical Tribute to the late Dr. Wooldridge.[3] The advantage which humanity has derived from this manifestation of Wooldridge's remarkable genius is almost incalculable. His research completely negatived the conclusion arrived at by Professor Schäfer in the investigation on transfusion he carried out at the request of the Obstetrical Society of London.

Stimulation of Intestines after Operation.

An accident which may arise in effecting the junction of the end of the ileum to the pelvic colon is a rotation of the end of the ileum on its axis. This may result in the formation of a twist of the end of the ileum and in its partial obstruction. It also renders the closure of the interval between the mesenteries of the ileum and pelvic colon difficult and possibly imperfect.

It must be remembered that the vast majority of colectomies are performed for the direct results of stasis of the simple toxic variety or for those in which the superadded infection by organisms is the prominent feature. The muscles generally, and the muscular coat of the small intestine especially, are thin, atrophied, and sluggish, so that this portion of the bowel lies inert and flaccid for a long period after the large bowel has been removed, and usually requires to be stimulated into activity by drugs. To meet this requirement a little castor oil or phenolphthalein should be added to the paraffin, which is administered as soon as possible after the operation. This tends to prevent stagnation of the intestines by stimulating them to vigorous action, and so to obviate the formation of inflammatory adhesions.

If there is any surface of the surrounding abdominal wall which has been deprived of its normal smooth peritoneal lining the inactive bowel is very likely to form adhesions to it, and sooner or later obstruction may result, sometimes after a long interval of months or years. The development of these inflammatory adhesions can only be avoided by the most scrupulous care on the part of the surgeon to avoid ligaturing large masses of mesentery or omentum, to cover with peritoneum all areas deprived of its protection, and to commence stimulating the intestines to act as soon as possible after the operation by means of paraffin and other agents.

Difficulties Occasioned by Previous Operations.

A great difficulty the surgeon not infrequently experiences in colectomy is that the patient may have already undergone many operations—appendicostomy, cæcostomy, suturing the cæcum to the iliac fossa, resection of part of the transverse colon, shortening of mesenteries, fixation of the omentum to the abdominal wall, and a host of other procedures—all of which render the accurate apposition of the edges of peritoneum very difficult indeed, and increase enormously the risk of the formation of adhesions, which constitute one of the most troublesome complications met with. Should obstruction result from this development it is important that the surgeon should act promptly, and should deal with them as effectually as possible. Symptoms of obstruction are most liable to develop after the removal of the tube from the rectum.

I recently excised with complete success the colon from a man who had been seen by more than 50 surgeons in different parts of Canada and the States, and who had had 16 abdominal operations, including 4 lateral anastomoses. His condition was regarded as inoperable. In dealing with very complicated cases it is well to remember that life may be carried on in perfect comfort with only a short length of small intestine.

[3] THE LANCET, 1891, ii., p. 626.

RESULTS OF IMPERFECT OPERATIVE PROCEDURE.

Diarrhœa following the operation is due to a partial obstruction, the frequent fluid motions being of the nature of an overflow, as in the analogous case of a leaking, over-distended bladder. This is frequently due to the surgeon not having taken sufficient care to avoid axial rotation of the end of the ileum, or to the imperfect union of the cut edges of the mesentery of the end of the ileum and of the pelvic colon, or to their separation subsequent to the operation allowing the intestines to prolapse through the interval and causing torsion of the terminal ileum. These mesenteries may become separated weeks or months after the operation for no very obvious reason.

The recurrence of superadded infections is usually due either to imperfect operative procedure or to the persistence of organisms in the wall of the small intestines which have not been destroyed by treatment after the operation, or more usually to the subsequent enormous elongation of the residual pelvic colon due to its over-distension from insufficiently frequent evacuation of its contents. The last condition arises because the patient will insist on having only one daily action, so that the intake of 24 hours is retained in the residual portion of the pelvic colon, which comprises only a fraction of the whole large intestine. Consequently it elongates, puddles in the pelvis, and obstructs the effluent from the ileum as effectually as it did before the large bulk of an elongated pelvic colon had been removed by a colectomy.

Many of the organisms that produce these diseases seem to invade and remain latent in the mucous membrane of the small intestine, and while they are enormously depleted in number by the freeing of the ileal effluent by the colectomy, they readily extend into and infect the contents of the ileum when stagnation again results from the subsequent development of obstruction. Fortunately, this only takes place in a small proportion of colectomies, yet the number is quite large enough to make it necessary to watch the progress of every case for some time and to endeavour to eliminate any residual organisms by drugs, vaccines, and diet. This is particularly called for when the residual pelvic colon is infected, as it may be in the case of dysentery and ulcerative colitis. Dr. N. Mutch lays great stress on the importance of the use of vaccines, &c., after some cases of colectomy. The surgeon must not consider the patient free from the possibility of recurrence till many years have elapsed, however extraordinary and remarkable may be the immediate success of the operation.

I think I have indicated clearly the causes of the failure and disappointment which occasionally exist after colectomy, and it is only by bearing them in mind and by taking every possible precaution to avoid them that the surgeon can hope to ensure a successful result. It is obvious that colectomy cannot be followed by equally beneficial results in many of the diseases which I have enumerated for the reason that much of the damage already done at the time of the operation is irremediable. For instance, teeth removed for pyorrhœa cannot be replaced; changes in the spinal cord have resulted in permanent damage; the severe deformities, disabilities of rheumatoid arthritis due to bony ankylosis of joints, are unaffected by the operation; and the organ or articulation disorganised by tubercle cannot be restored to its normal structure and usefulness, and so on. Yet in spite of all this there are innumerable changes resulting directly and indirectly from stasis which recover to an extent that at first sight would seem quite impossible. The strangest aspect of it is the extraordinary rapidity with which they ensue in many conditions. In some the change is almost instantaneous, while in others the symptoms disappear slowly.

CONCLUSION.

The mortality of the operation must vary largely with the kind of case on which the surgeon operates. One man will confine the operation only to such as would appear to be what are called "good surgical risks"; another is prepared to interfere in cases of a very

serious nature, realising that with death or prolonged misery facing the sufferer he must take his courage in his hands and do what he conscientiously considers to be the best for his patients, although it may not coincide with the good effect he hopes to produce by favourable statistics. At the present time colectomy is performed very generally in many parts of the world. Such an advanced and progressive surgical community as the Argentine, for instance, is fortunate in possessing both Dr. Jose Arce, the professor of clinical surgery of the Faculty of Medicine of Buenos Ayres, and Dr. Artemio Zeno, the professor of surgery in the Litoral University of Rosario, who tell me that they have done very many colectomies, and are continuing to do them in increasing numbers with a very small mortality. Even in England, where progress is slow but equally sure, I find that many surgeons are doing this operation with great advantage to their patients.

Perhaps even more important than the operation is the wider knowledge of chronic intestinal stasis and of the conditions of which stasis is a necessary antecedent, together with their medical treatment, which surgical measures have tended to develop. Not its least result has been to make medical men concentrate their attention on this most important and very comprehensive subject.

LEGG'S OR PERTHES'S DISEASE.

THE DIFFERENTIAL DIAGNOSIS OF AFFECTIONS AT THE HIP IN CHILDREN.[1]

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WHEN a child who complains of pain in the hip and shows a limp on walking is brought for advice the suggestion of "hip disease" naturally occurs to us. Tuberculous disease is at once the commonest and gravest affection of the hip, necessitating early diagnosis and treatment if the functional utility of the joint is to be restored. It is always well, therefore, first to exclude this disease before proceeding to examine for other conditions. Throughout life the region of the hip is liable to such a variety of diseases, deformities, and injuries that at any age a most careful, methodical, and exhaustive examination is essential for an accurate diagnosis. On account of its inaccessibility both to visual and manual examination the hip-joint, of all joints in the body, presents the greatest difficulty. Without skiagraphy our conclusions, based largely upon indirect evidence, call forth the utmost diagnostic resource of the examiner. True, the advent of X rays has rendered the task more easy and proves of inestimable value in confirming or disproving our deductions, but complete reliance on such diagnosis without careful and methodical physical examination will lead, sooner or later, to serious error.

Limping.

The late Sir George Humphry's dictum that the human foot was God's last and most perfect work might very well be extended to include the whole mechanism of walking, which, being so intricate and perfect, like all complicated machinery, is very easily thrown out of gear by very slight causes, such, for instance, as a small corn on the little toe.

As limping is generally the first and most striking indication of something wrong, it may be well briefly to consider some of the causes of this symptom. For this purpose we may broadly classify limping into two categories:—

(*a*) *Painless limp.*—This may be due to shortening of the limb, paralysis, or stiffness of one joint. In all these conditions the limb is not spared as a means of support, but is used to the full. The body inclines towards the affected side at every step: in shortening of one limb because one limb is shorter than its fellow; in the paralytic limp because the patient first supports himself vigorously on the affected leg, and then more firmly on the healthy leg in order to throw the diseased leg forward for the next step; and in painless stiffness of one hip because the entire extremity, including the half of the pelvis, is moved forward as a whole, the weight of the body being received by both legs equally.

(*b*) *Painful limp.*—The interdependence of all the joints of the lower extremity is very well shown when the movement of one of them becomes painful. In such a case the patient stiffens all the joints by muscular action, and avoids, as far as possible, putting any weight on the affected limb by inclining his body towards the healthy side.

Method of Examination.

In conducting an examination for conditions at or near the hip the patient should be stripped. If he is able to walk it will be easy to observe the gait and note to which category it belongs—painful or painless limp. By further inspection the experienced observer may be able, if not to make a positive diagnosis, at least to narrow down the possibilities to a very limited extent. For instance, the obliteration of the gluteal fold indicates slight flexion at the hip, which together with some muscular wasting of the thigh would indicate hip disease.

The patient should now be laid on a flat couch and directed fully to extend both lower limbs. Attention should be drawn to the comparative length of the two limbs and the curvature of the lumbar spine. If the curve be exaggerated (lordosis) the sound limb should be flexed as far as possible on to the abdomen—Thomas's manœuvre—for in this way the lumbar spine is flattened by rotation of the pelvis. If the affected thigh now takes up a position of slight flexion, abduction, and rotation outwards, it points to fixity of the hip-joint in this position due to muscular rigidity and most probably hip disease.

On further examination of the affected limb it will be found that the movements of the hip are restricted or abolished in every direction, all apparent movements taking place at the lumbo-sacral junction. Each movement—flexion, extension, abduction, adduction, internal and external rotation—should be tested separately and compared with those on the sound side.

Fixity of the Joint in Early Tubercle.

It is important to remember that in early hip disease a few weeks' rest in bed may cause all the symptoms to disappear; this is due to abatement of the disease brought about by the rest, and must not be thought to be due to a faulty diagnosis, as on resuming activity all the pain and rigidity reappear. The fixity of the joint in early tubercle varies in degree with whether the child is rested or tired. Abduction and rotation are the movements first interfered with. If a child is being examined after a period of rest flexion and extension may be very little restricted. In such a case a good test is to attempt to abduct the limb rapidly. Spasm of the adductors will indicate involvement of the hip-joint, even if flexion and extension are perfectly free. As the disease becomes less acute spasm becomes increasingly difficult to demonstrate, until eventually it completely disappears. Gauvain states that at the last it may be elicited in the following manner:—

If the femur on the affected side be grasped firmly in the region of the condyles it will be found that the head of the bone may be gently rotated within the acetabulum, either inward or outward, through a varying but often considerable angle. At the point where this movement is checked a further slight sharp rotation is instantly followed, should the disease be still active, by spasmodic muscular contraction, not confined to muscles about the joint, but extending to the abdomen and visible in the abdominal muscles, or still more easily demonstrated if the palm of the hand is placed on the abdomen between the iliac spines. Quite a gentle and painless but sharp rotary movement is sufficient to provoke this reflex spasm of the abdominal muscles. Failure to elicit this induced spasm, Gauvain adds, "may not necessarily imply that there is no active disease, though very probably the disease is quiescent. Its presence certainly indicates an active lesion."

Direct pressure just below the mid-point of Poupart's ligament will cause pain. This is often an early sign of hip disease, and combined with muscular rigidity is pretty conclusive evidence of joint infection.

Subacute Infections Denoted by Fixity of the Joint.

Although fixity of the hip generally denotes tuberculous disease, there are other conditions which may

[1] A paper read before the Cambridge Medical Society, Nov. 5th, 1920.

cause a painful limp with muscular rigidity which must be excluded. Amongst these may be mentioned all forms of subacute infections of the joint. In this connexion it must be remembered that a tuberculous focus generally commences in the epiphyseal junction of the neck of the femur and must almost inevitably break through into the hip-joint owing to the anatomical relations of the epiphyseal line to the joint cavity. This sudden breaking into the joint causes acute symptoms with fever. A preceding history of slight articular pain would point to tubercle. A rigor or herpes labialis accompanying the acute exacerbation would be indications against tubercle.

Conditions Simulating Hip Disease.

The type of arthritis deformans sometimes met with in adolescents presents the greatest difficulty in diagnosis, as the resemblance to tuberculous disease may be very close. Even the evidence of a skiagram may fail to be conclusive. Detection of the disease in other joints will clear up the diagnosis.

There are other conditions, independent of the joint, which may cause pain and some restriction of movement and so simulate in some respects tuberculous disease of the hip.

Amongst these may be mentioned tuberculous disease of the sacro-iliac joint, a tuberculous focus in the great trochanter or disease of the overlying bursa, disease of the sub-psoas bursa, and psoas abscess from tuberculous disease of the spine. In this last condition the limb is flexed and everted; there may be lordosis, and the patient may limp in walking, but the movements at the hip are restricted only in the direction of extension and inversion, while in hip disease they are restricted or abolished in all directions. New growth in the vicinity of the hip, myeloma or sarcoma of the upper end of the femur, may simulate hip disease by causing flexion of the hip-joint and pain, leading to a painful limp. Inflamed glands in the groin, a paranephritic or appendicular abscess, may all cause spastic flexion of the hip, and an incomplete examination may lead to an erroneous diagnosis. Sciatica, neuralgia, and hysteria may all present difficulties in diagnosis and should be remembered.

Measurement.

Having conducted our examination so far, and, from the absence of pain and restricted movements in every direction, come to the conclusion that the case is not one of hip disease, we now proceed to further examination in order to ascertain the cause of the limp, excluding, for the purposes of this paper, all conditions other than those in the neighbourhood of the hip-joint.

With the limbs lying side by side, or as near the same position on either side as the condition will allow, we proceed to measure both limbs (1) from the anterior superior spine to the tip of the external malleolus, and (2) from the tip of the great trochanter to the malleolus. (In cases of extreme external rotation it may be more convenient to use the internal malleolus.) We next ascertain the relative position of the great trochanters to the pelvis. There are many ways of doing this, but the most graphic and satisfactory method is by means of Bryant's triangle. With the patient lying on his back on a flat couch, a base line is drawn from the tip of the great trochanter, prolonging the axis of the femur towards the trunk. A vertical line is drawn from the anterior superior spine to this base-line, and a third line is drawn joining the iliac spine with the tip of the trochanter. The right-angled triangle so obtained is normally an isosceles triangle. Any displacement of the trochanter upwards or backwards will alter the character of this triangle. The triangle should always be drawn on both sides for comparison, as in unilateral conditions the sound side acts as control, and even in bilateral affections the alteration in shape of the triangle is a useful diagnostic factor.

Non-traumatic Deformities Apart from Legg's Disease.

Omitting from discussion all conditions causing displacement of the trochanter which may result from injury, there are several, for the most part painless, non-traumatic deformities at the hip which have to be differentiated.

1. *Congenital dislocation of the hip.*—In this condition the head of the bone, although still within the capsule of the joint, is no longer in the acetabulum. It is generally above and posterior. The position of the great trochanter is correspondingly altered, as revealed by a long narrow Bryant's triangle with a shortened base-line. As compared with hip disease, the joint is characterised by remarkable acrobatic mobility of the thigh. The head of the femur can be moved backwards and forwards on the pelvis, and traction on the lower limb gives the characteristic "telescoping" of the leg. There is marked lordosis of the lumbar spine due to the backward implantation of the head of the femur on to the pelvis, which causes the centre of gravity of the back to fall along a line anterior to the points of body support; the backward curvature of the spine is the endeavour to bring it back again over the feet. In thin girls it is quite possible to see the head of the bone moving about, with every step, in the gluteal region. But in small fat children it is not so evident. A general anæsthetic may even be necessary to form a definite diagnosis. Trendelenburg's sign is characteristic of this condition. Malgaigne lays the child upon the healthy side and flexes the leg of the affected side to a right angle and slightly adducts it. One hand manipulates the limb so as to press the head of the bone as far as possible away from the pelvis. At the same time the limb is rotated. By palpation with the other hand two protuberances may be felt, one being the trochanter, the other the head of the femur. If only one protuberance is felt this is the trochanter and no dislocation is present. The history that slight lameness or waddling gait was observed as soon as the child attempted to walk completes the evidence in favour of congenital dislocation of the hip.

2. *Infantile paralysis.*—This condition when affecting the gluteal muscles may sometimes cause difficulty in diagnosis. The paralytic limp is very similar to that of congenital dislocation. The trochanter is rendered prominent by the wasting of the gluteal muscles. The undue mobility of the hip combined with some shortening of the limb completes the deception. Here, again, the history of the child having walked quite well previously, the history of an infective illness followed by widespread paralysis which gradually subsided, gives a clue as to the true nature of the condition. On examination Bryant's triangle will be unaltered, showing that the great trochanter is in its normal situation in relation to the pelvis. In progressive muscular atrophy the marked lordosis is suggestive of congenital dislocation. Examination of Bryant's triangle again prevents an error of diagnosis. If Bryant's triangle shows an abnormal position of the great trochanter without undue mobility of the hip but rather restricted movements in certain directions the abnormal position of the trochanter must be due to changes in the head or neck of the femur.

3. *Coxa vara.*—The forces acting on the neck of the femur are: (1) the downward thrust due to the weight of the body pressing on the head of the bone through the acetabulum, and (2) outward rotation of the femur, which force is brought into play during standing and walking by the powerful action of the glutei. This latter force is resisted by the strong ileo-femoral ligament. Any condition which causes softening of the bone will allow these forces full play and a bending of the neck of the femur results. In true coxa vara, the deformity as first described by Kocher, both these forces have acted on the neck of the femur and resulted in a bending of the neck in two planes: (*a*) a curvature with its convexity upwards due to the bodyweight thrusting down the head of the bone; and (*b*) a curvature with its convexity forwards due to the outward rotating strain acting on the neck during standing and walking. If now the head of the femur retains its normal relation to the acetabulum, the shaft of the bone, and hence the lower limb, will assume a position of marked adduction, external rotation, and hyperextension. In order to walk the limb must be brought parallel to its fellow. This is done by abduction, flexion, and internal rotation of the thigh. In extreme cases the whole range of abduction and internal rotation is taken up in order merely to attain the normal position of the limb. Hence in coxa vara these movements are restricted whilst all other movements are perfectly free. Owing to the upward lift of the trochanter there will be a corresponding shortening of the limb. The gait will be as in a case of painless limp.

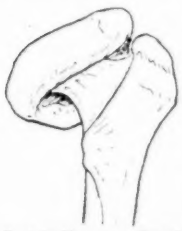
Coxa vara may be mistaken for early hip disease; like flat-foot it has a painful stage, so much so that even fixity of the joint may occur for a time. Careful examination will prevent this error in diagnosis. Coxa vara is not a disease in itself, but a deformity of the neck of the femur resulting from any condition which renders the bone unable to withstand the strains thrown upon it. Such conditions are: Early rickets, habitual carrying of heavy weights during adolescence, adolescent arthritis deformans, late rickets or rachitis adolescentium (which condition is for the most part confined to the ossifying junctions of the bones), and, in later life, mollities ossium, osteitis deformans, arthritis deformans, and fibrocystic disease of bone. The deformity may also result from osteomyelitis, tubercle, or fractures, or it may even be congenital.

4. *Coxa adducta.*—In this deformity the normal obtuse angle of the neck of the femur is diminished, sometimes to a right angle, and in severe cases even to an acute angle. The curvature of the neck of the femur is only in one plane, thus differing from that of coxa vara. If the head of the femur retains its normal relation to the acetabulum the

thigh would assume a position of extreme adduction, which would take up the whole range of abduction in order to attain the normal position in standing. Hence abduction is the only movement affected in this condition, again distinguishing it from coxa vara, in which both abduction and internal rotation are restricted. The conditions which produce this deformity are similar to those which lead to coxa vara. I would especially mention separation and slipping down of the epiphysis of the head, due either to trauma or late rickets.

Legg's or Perthes's Disease.

There is yet another affection of the hip to which attention should be drawn, a condition which appears to have been first described by Legg, of Boston, as early as 1909. He described it under the title "an obscure affection of the hip-joint." In 1910, Perthes, of Tübingen, apparently unaware of Legg's paper, published reports on cases of "Arthritis Deformans Juvenilis." Later on, in 1913, having excised a piece of synovial membrane, and a piece of the head of the femur from one of his cases, and finding no evidence of inflammation, he concluded that it was not an arthritis, nor did it bear much resemblance to what the Germans called arthritis deformans. But he renamed the condition "Osteochondritis Deformans Juvenilis." About the same time (1910) Calvé described a disease, which appears to be identical, and called it by the non-committal name of "pseudo-coxalgie"—a wise precaution, in that the pathology of the disease is still obscure. The condition is generally described as "Perthes's disease," although in justice to Legg's undoubted priority it should be called "Legg's disease."



Legg's disease. Specimen in the Humphry Museum. An adult femur showing flattening and curling over of head of femur like a mushroom. There is no deposit of bone upon the neck or any other part of the femur. Is this the ultimate result of Legg's disease?

This affection of the hip occurs in children between the ages of 3 and 12 years. Of 50 collected cases 40 were in boys and 10 in girls. The subjects are apparently in perfect health, strong and robust. It is not common. Delitala found only 6 cases in 1500 cases of "hip affections of orthopædic nature." In that the first symptom is a limp, with perhaps a certain amount of pain—which, however, is never severe—it may be taken for early hip disease.

Clinical examination.—There may be some prominence and elevation of the trochanter with a little shortening of the limb (¼–1 in.). Bryant's triangle will show a correspondingly shortened base-line. On testing the movements, flexion and extension will be found to be perfectly free and painless. Internal rotation may be slightly limited, but abduction will be markedly restricted. The condition is almost always unilateral and the disability slight. It is distinguished from the juvenile type of arthritis deformans in that in the latter there is more pain, loss of movement, and deformity. In Legg's disease there is no crepitation on movement or other sign of involvement of the articular surfaces.

X ray examination.—By this means marked changes are observed. In a typical case the upper border of the bony nucleus of the femoral head, instead of being represented by a segment of a circle, is shown as a flat surface. In photographic prints (positives) light spots may be seen in the head which are supposed to be islets of cartilage, showing irregularity of ossification. The epiphyseal line between the head and the neck is irregular or even segmented. The neck of the femur is more pervious to X rays than its fellow and its contour may be irregular. The acetabulum may be blurred or irregular.

The characteristic feature of the disease is the astounding X ray picture associated with little or no disability.

Etiology.

A large percentage of recorded cases give a history of injury four to six months previously. It is said to be often seen after reduction of congenital hip dislocation, occasionally on the sound side. It has been suggested that hypothyroidism is to blame, as in some cases a family history of this defect has been elicited. Gauvain, amongst others, suspects the condition to be an infection, and has reason to suppose that the infection is protozoal rather than bacterial. Roberts believes the condition to be a result of congenital syphilis in spite of a negative Wassermann reaction, arguing that subjects with frankly syphilitic bone lesions and with a definite family history of syphilis often give a negative reaction, and also that the pathological findings in Perthes's disease coincide with osteochondritis, one of the most common expressions of bone syphilis in children. Finally, he points out that the course of Perthes's disease is similar to that of many other syphilitic joint conditions in that the destructive process is self-limited and that there is a tendency to more or less complete restoration of function. Whether or no some constitutional condition underlies Legg's disease has not yet been proved. It is certain, however, that the disease must be one of three pathological processes—namely, new growth, inflammation, or degeneration—due to some circulatory disturbance. There is nothing to suggest new growth. As regards inflammation, Ely rightly states that it is not likely that a destructive inflammation could exist in the head of the femur without causing symptoms or an arthritis. No evidence of an arthritis has been adduced. As regards degeneration due to some circulatory disturbance, there are certain points worthy of consideration.

Traumatic Injury.

First, although trauma has been discounted as a causative factor, it should be noted that a large proportion of recorded cases give a definite history of injury some few months previous to the onset of symptoms; secondly, that the disease occurs more frequently in boys, who are proverbially more prone to injury, than in girls, in the proportion of 4 to 1; and thirdly, that the disease has only been observed in the epiphyseal head of the femur, the epiphysis most subjected to strains and contusions. As no theory of infection or constitutional condition can alone explain why Legg's disease only occurs at the hip, let us assume that trauma is a definite causative factor.

Circulatory Disturbance.

In the absence of positive evidence of inflammation let us also assume that the disease is of the nature of degeneration due to some circulatory disturbance. In support of this assumption there are certain anatomical points of interest in connexion with the upper epiphysis of the femur which may have an important bearing on the incidence of Legg's disease at this epiphysis to the exclusion of all other epiphyses.

With the exception of the head of the radius, the epiphysis of the head of the femur is the only epiphysis whose surface is entirely covered with articular cartilage. Except for a few insignificant vessels which enter the head through the site of the ligamentum teres, the epiphysis is entirely dependent for its blood-supply on the small vessels entering the circumference where the epiphysis joins the neck, thus differing from the lower epiphysis of the femur, for instance, which has large areas covered with periosteum on the mesial and lateral condyles, from which it derives a free supply of blood. True, Kolliker has observed blood-vessels burrowing into the epiphyseal cartilage from the diaphysis, but this supply would be small. The nutrition of cartilage has not been fully worked out yet. Strangeways asserts that articular cartilage is nourished by the synovial fluid, and that the changes found in osteo-arthritis are secondary to defects in the secretion of the synovial membrane. At birth the upper epiphysis of the femur includes the great trochanter, thus resembling at this age the upper epiphysis of the humerus. The neck of the bone is developed as an upward extension of the shaft, which eventually divides the epiphysis into two, one portion forming the head and the other portion the trochanter. This division is completed about the third year, the earliest age at which Legg's disease has been observed. From this age onwards the restricted blood-supply of the head would obtain.

Skiagraphic Evidence.

Any injury causing a separation, or partial separation, of this epiphysis, or severe contusion of the epiphyseal junction might seriously interfere with the blood-supply, which disturbance might lead to degeneration of the cartilaginous head. Skiagraphic evidence would seem to support this theory.

The flattening of the head by the pressure of acetabulum due to the weight of the body suggests a softening of the

cartilage forming the head. The irregularities in ossification evidenced by the transparent islets suggest rather circulatory disturbance than infection. And, lastly, the apparent displacement of the epiphysis, often described, is suggestive of trauma. The changes in the acetabulum may very well be secondary to those in the head. The disease, resulting as it does in so little disability and tending to more or less complete restoration of function, the opportunity of obtaining specimens during the active period of the disease, must, of necessity, be rare. Our evidence is, therefore, almost entirely skiagraphic, and until the interpretation of bone lesions, as shown by X ray, is based on a wider experience of comparison of skiagrams of specimens of known conditions with those found in the living, so long will the pathology of

Skiagram of Legg's disease of right hip.

many bone diseases remain obscure. There is a wide field for research in this direction. The affection runs its course in two to three years. Its most active period is one year. Even after all symptoms have subsided and a cure evidently has been obtained, the X ray may still show an alarming picture.

Treatment.

As regards treatment, most surgeons seem to have considered that none was called for. Fixing the thigh in an abducted position by means of a plaster-of-Paris splint and allowing the child up on crutches with a patten under the sound foot until the more acute stage has passed would seem the most rational procedure to adopt.

Before concluding I will briefly describe one of my cases, that of a boy, aged 13, but markedly underdeveloped, an only child of healthy parents, with no history of important previous illness.

In January, 1917, he began to limp and complained of shooting pains in left leg, which symptoms increased so that in March, 1917, he was unable to walk; the mother stated he had marked muscular wasting of thigh. He was taken to a hospital where his left leg was put into a Thomas's splint and kept therein for 1 year 4 months, being removed in August, 1918. The boy was necessarily lame for a time, but gradually improved, until in a few weeks he did not limp at all. In October, 1919, he began to limp again with little or no pain, and in March, 1920, came to my out-patient's department complaining of limp and pain in right knee, hip, and back. I obtained a history of his having fallen off a baker's cart six to seven years before with no apparent injury. On examination I found over ¼ inch shortening on right side, free movements of flexion and extension, but restricted abduction. Bryant's triangle showed a shortened base line. The X ray picture revealed a condition similar to that described as occurring in Legg's disease. Wassermann reaction was negative.

Summary and Conclusion.

It will be seen that affections at the hip fall into two groups: (1) those in which there is pain and muscular rigidity, restricting movement of the joint in every direction, the most common and important member of this group being tuberculous disease of the hip; (2) those in which there is little or no pain and no muscular rigidity, but rather undue mobility or restricted movements in certain directions only. Under this group fall congenital dislocation of the hip, coxa vara, coxa adducta, and Legg's or Perthes's disease. After a careful and methodical physical examination has been made and an opinion formed as to the nature of the case the patient should be referred to the radiologist for skiagraphic evidence, not, as is so often done, for diagnosis. X ray diagnosis unsupported by clinical evidence is sure, sooner or later, to lead to serious error. The surgeon and the radiologist should work together. This is but another example of the value of "team-work." It is essential that both joints should be photographed. In order to minimise errors of reading which may result from differences in exposure, developing, or the position of the plates in relation to the bones, both hips should be taken on the same plate. The sound joint is our only reliable control. In cases of early hip disease the changes may be so slight that without the sound side to compare with it is almost impossible to be certain as to the normal outline of the bone, or as to whether there is narrowing of the shaft due to atrophy, abnormal transparency of the bone (osteoporosis), or whether the gap, representing the articular cartilages on the head of the femur and acetabulum is of normal thickness, or whether small foci of disease exist.

I must not, however, trespass on the province of the radiologist. I will content myself by re-emphasising my remarks as to the necessity of surgeon and radiologist working together. The clinical picture and the skiagram are often diametrically opposed. In tubercle, for instance, physical examination, on the one hand, finds a subject with pain and fixed hip-joint with consequent grave disability. The X ray, on the other hand, especially in cases of primary synovial infection, may show nothing at all, whereas in Legg's disease the radiologist may be staggered by the alarming picture presented by the skiagram, whilst the surgeon finds a patient with little or no disability. Team-work is the keynote of future medicine and surgery. It is thus, and thus only, that the best results will be obtained.

THE FREQUENCY OF LATENT SYPHILIS IN A MEDICAL DEPARTMENT.

BY TH. E. HESS THAYSEN, M.D.,
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THE great value of the Wassermann test in a medical clinic is a well-known fact, established by numerous investigations both in the New World and in the Old. The question of the frequency of latent syphilis[1] among patients in a medical department has not, however, yet been settled, because as a rule a W. test has been carried out only where the clinical symptoms point to syphilis or where there has at least been cause for suspicion thereof. For the discovery of latent syphilis it is necessary also to perform a W.R. in those cases where neither the history of the case nor the clinical examinations give any reason for considering the patient as a syphilitic, as only in this way are we able to discover the cases where the positive W.R. is the only sign of the luetic infection. Such researches have been made by Fildes in 1917, Bruhn in 1916, Weill in 1914, in Denmark by Scheel and Arne Faber in 1917, and by Meulengracht in 1919. Interesting investigations have been performed by Fildes on out-patients at the London Hospital, who did not suffer from any medical disease, while Bruhn examined patients, amongst whom were several soldiers, at the dermatological clinic in Charlottenburg, near Berlin. The results gained by these authors can therefore not be compared with others derived from a medical department. In his treatise, which I only know from a short account in *La Presse Médicale* Weill does not state in how many cases he found latent syphilis.

Between April 1st, 1917, and April 1st, 1918, I have performed the W. test on 738 patients at St. Johannes-stiftelsen. All patients over 15 years of age admitted there were examined except those who died at once or a few hours after their admittance; a few were omitted

[1] The name latent syphilis was invented by Fournier, for cases only recognised in the tertiary stage. Since the introduction of the W. test we must add those cases in which the positive W.R. is the only sign of the luetic infection.

accidentally, but the essential fact is that no selection has taken place among the patients. All the W. tests were performed at the State Serum Institute of Copenhagen with the technique described by Boas in 1910. The cases in the tables have been divided into

TABLE I.—*Cases with History of Syphilis.*

Sex.	W.R.	Clinical symptoms.	Total number.	Sex.	W.R.	Clinical symptoms.	Total number.
Men	+	−	15	Women	+	−	8
		+	5			+	4
	−	−	9		−	−	6
		+	7			+	4

TABLE II.—*Cases without History of Syphilis.*

Men	+	−	12	Women	+	−	24
		+	5			+	10
	−	−	283		−	−	335
		+	5			+	6

two groups, in the first of which are collected those patients who gave a positive history of primary infection, and in the second those in whom the case-history was negative in this respect. In each group it has been estimated how many patients could be recognised as syphilitics by clinical examination alone, judging from typical symptoms.[2] I admit that the limits of what we can recognise clinically as syphilis have been rather strictly defined, but for practical reasons I have omitted a group of "probable syphilitics."

A comparison between Tables I. and II. shows us, that out of 32 patients in Table I. with positive W.R., clinical symptoms were found in 9 cases; and out of 51 in Table II. in 15 cases. All patients in the first table had had previous treatment, but none in Table II. In 655 patients with negative W.R. clinical symptoms of syphilis were found in 22 cases; in half of them there was no evidence of previous infection. In 83 patients with positive W.R. clinical symptoms were found in 24 cases. In 36 of these 83 patients the positive Wassermann was the only sign of possible syphilis, or what led to a decision to consider them as syphilitics.

It is among these 36 patients and 11 cases with negative W.R. and clinical symptoms of syphilis, that we may expect to find the cases of latent syphilis.

The Diagnostic Value of the Wassermann Test.

How many of the former 36 patients we can regard as syphilitics depends upon the value one can ascribe to the W. test as an aid to diagnosis. The point of view which demands that the smallest dose of serum (0·2 c.cm.) must inhibit hæmolysis completely if the reaction is to be regarded as specific, will certainly be justifiable when the rare non-syphilitic diseases giving positive W.R. can be excluded. This standpoint is maintained by Craig, and agrees with the experiences gained in this country. Table III. shows that complete inhibition was found in 30 patients by employing 0·2 c.cm. serum; in 18 of the 19 in which the test was repeated the reaction was again positive, and only became negative at a third examination after treatment (Nos. 13, 17, 28). In one case, No. 9, the reaction was negative at a second examination, although the patient had not been treated. This case must be excluded as doubtful. The remaining 29 cases can with fair probability be regarded as syphilitic. In Case 15 a partial inhibition was found at two examinations at about a fortnight's interval; this patient can with fair probability be considered as a syphilitic. In the remaining five cases partial inhibition was followed by a negative reaction. Thus, among 36 cases there are 30 (20 women and 10 men) which we look upon as most probably syphilitics. (Table III.)

[2] As sure signs of syphilis are reckoned the phenomenon of Argyll Robertson, tabes, general paralysis, and other symptoms of the central nervous system, which in all probability point to syphilis; aneurysm of the thoracic aorta, aortitis, syphilitic liver, saddle-nose, perforation of the palate and the bony part of the nasal septum, cicatrices of the palate of unknown ætiology, arthropathies showing X ray appearance as in the tabetic, paroxysmal hæmoglobinuria, cicatrices of typical aspect and position, and typical periostitis of the tibia with no other known cause. Dermal affections of syphilis are not found among my cases.

TABLE III.

Serial number.	Age.	Sex.	Complaint.	W.R. of blood. Smallest quantity of serum giving no hæmolysis.	W.R. of blood. Largest quantity giving complete hæmolysis.
1	60	F.	Chronic nephritis, arrhythmia.	0·05 0·1	0·01 0·025
2	57	F.	Broncho-pneumonia.	0·2	0·1
3	53	F.	Multiple arthritis, ulcus cruris, pyuria.	0·2 0·2*	0·05 0·1
4	71	F.	Multiple arthritis, pyuria.	0·05 0·1	0·01 0·025
5	42	F.	Alcoholic polyneuritis.	0·0025 0·05 0·05	0·0005 0·01 0·01
6	80	F.	Ulcus cruris.	Neg. 0·2 Neg.	... 0·1 ...
7	75	F.	Senile dementia.	+ + 0·2	... 0·01
8	64	F.	Left hemiplegia.	0·05 0·02	0·01 0.05
9	73	F.	Uterine cancer.	0·2 Neg.	0·05
10	31	F.	Pulmonary tuberculosis.	0·2	0·05
11	72	F.	Facial and peripheral palsy.	0·001	0·0005
12	41	F.	Nephritis, optic atrophy.	0·05 0·2 0·2	0·01 0·025 0·025
13	52	F.	Mental disease.	0·1 + + Neg.	0·024 ... ...
14	75	F.	Bronchiectasis.	0·01 0·005 0·1	... 0·001 0·025
15	75	F.	Encephalo-malacia.	0·2* 0·2†	0·1 0·1
16	57	F.	Pulmonary tuberculosis.	0·01 0·025	0·0025 0·005
17	40	F.	Melancholia.	0·2 — Neg.	0·05 0·1 ...
18	49	F.	Miseries.	0·00025 0·00025 0·00025	0·0001 0·0001 0·0001
19	75	F.	Chronic nephritis.	0·025	0·005
20	48	F.	Uterine cancer.	0·05 0·2	0·01 0·05
21	72	F.	Uterine cancer.	0·005	0·001
22	57	F.	Miseries, anæmia.	0·2	0·05
23	37	F.	Right pleurisy.	+ +	...
24	43	F.	Uterine cancer.	0·2‡	0·1
25	29	M.	Melancholia.	0·2	0·05
26	76	M.	Senile dementia.	0·025	0·005
27	81	M.	Bronchitis.	0·2	0·05
28	64	M.	Right hemiplegia.	0·1 0·2 0·2 Neg.	0·025 0·05§ ... ...
29	59	M.	Ulcus cruris.	0·0001 + + + + +	0·00005 ... ...
30	57	M.	Lobar pneumonia.	0·025 0·01 0·025	... 0·0025 ...
31	50	M.	Ulcus cruris.	0·05 0·05	0·01 0·025
32	38	M.	Pulmonary tuberculosis.	0·2	0·05
33	67	M.	Arterio-sclerosis.	0·2	0·05
34	42	M.	Amputation left femur.	0·05	0·01
35	49	M.	Alcoholic polyneuritis.	Pos.	...
36	69	M.	Left hemiplegia.	0·2* Neg.	0·05 ...

* = 20 per cent. hæmolysis. ‡ = 40 per cent. hæmolysis.
† = 10 " " § = 80 " "

Remarks.

Case 5.—C.S.F.: W.R. neg., no cells. Treatment: 50 inunctions, KI. *Case 12.*—C.S.F.: W.R. 0·2, 0·05, 2 cells. *Case 13.*—Treatment: inunctions, KI. *Case 16.*—Treatment: inunctions, neosalvarsan. *Case 17.*—C.S.F.: W.R. neg., no cells. Treatment: inunctions, neosalvarsan. *Case 19.*—C.S.F.: W.R. neg., no cells. *Case 25.*—C.S.F.: W.R. neg. *Case 26.*—Treatment: inunctions. *Case 28.*—C.S.F.: W.R. neg., no cells. Treatment: inunctions. *Case 29.*—Treatment: inunctions, KI. *Case 30.*—Treatment: inunctions, KI. *Case 34.*—Treatment: inunctions, neosalvarsan.

These patients have been examined with special care in order to find signs of syphilis. The history of the cases have been taken in as much detail as possible.

As already mentioned, it is difficult to see in Weill's treatise in how many cases the positive W.R. was the only sign of existing syphilis. Arne Faber, who examined 1233 patients, found 29 positive W.R. without any other sign of syphilis, and all the patients denied previous infection. In 21 of these (13 women and 8 men) complete inhibition was found by employing 0·2 c.cm. serum. Arne Faber does not state in how many cases the reaction was repeated, only that this was done. Meulengracht found, among 504 patients, 10 in whom the positive W.R. was the only sign of syphilis, while quite confident in considering the patients as syphilitics.

The Statistics Examined.

I can throw no light on the great differences in the frequency of latent syphilis found by these workers owing to the deficient history obtainable in the cases in my series. This was only to be expected, as the greater part of my patients are old; Faber in accordance with Meulengracht found that barely half (45 per cent.) of his syphilitic patients gave evidence of previous specific infection. Among 114 syphilitics I found 52 only who gave a clear history of a primary sore.

A glance at the class of patients in the departments which furnished material for this examination gives us, on the other hand, some explanation. Faber performed his investigations at the municipal Bispebjerg Hospital, which admits patients mainly of the middle classes of Copenhagen. Meulengracht investigated the medical clinic of the University, at which the greater number of patients come from the country population. My patients are taken from a hospital which only admits the poorest, of whom no doubt many have been infected at a time when neither the knowledge of syphilis was as widespread as it is now nor the diagnosis as certain. Finally, we must allow for some difference in the interpretation of what clinically can be recognised as syphilis and what not, especially between Faber's and my patients. It seems that Faber means that a pure aortic insufficiency is a sign of syphilis, whereas I, in accordance with the post-mortem examinations of Flojstrup, only do so if the history of the case shows evidence of syphilis or other signs of this disease. Flojstrup found that in 22 cases of pure aortic insufficiency only 13 suffered from syphilis. From Faber's treatise it is impossible to see to how great a degree our notions of what can be recognised as syphilis differ, so that I am unable to interpret his figures quite. His investigations are, however, still the easiest to compare with mine. Doing so we find:—

Faber	1233 patients,	with 21 cases,	1·7 per cent.		
Thaysen... ...	738	,,	,, 30	,,	4·1 ,,
In all	1971	,,	,, 51	,,	2·6 ,,

The approximate frequency of ignored latent syphilis discovered only through the W.R. among patients in a medical department which admits patients of all ages, above 15 years, from a large town is, as we see, about 2·5 per cent. of the whole number.

In Table IV. I have collected syphilitic patients according to their age in groups of 5 years from 20 to 80 years of age. In the cases where I have

TABLE IV.

Age.	No.	Age.	No.	Age.	No.
21–25	2	46–50	4	66–70	2
26–30	2	51–55		71–75	1
31–35	4	56–60		76–80	1
36–40	2	61–65		80	1
41–45	9				

been able to ascertain at what age the patients in my series have contracted the syphilitic infection it has varied between the ages of 18 to 40, the average age being 26. If we reckon the age of 25 as an average we find the following based on Faber's and my series of cases: 8 patients have had the syphilitic infection for 15 years, 19 from 15 to 30 years, 12 from 30 to 45, 10 from 45 to 60 years, without it having given any symptoms which clinical examination could detect.

Looking through the diseases for which these patients were admitted, we find nothing characteristic. The cerebro-spinal fluid has been examined in six of my patients; 5 showed negative W.R., whilst one, No. 4, was positive; this patient was being treated for chronic nephritis and optic atrophy. The amount of cells in the cerebro-spinal fluid was not increased in the 5 cases examined. A post-mortem examination has taken place on 5 of my patients mentioned here without it having been possible to discover any macroscopic sign of syphilitic disease. Of the 5 cases, one had a syphilitic liver, and in another the post mortem was only partial. In all the other cases all organs, the brain included, have been examined.

The other group of latent syphilis contains 11 patients in whom the W.R. was negative, but where clinical symptoms made it most probable that they had been suffering from syphilis (Table V.). The cases are collected in Table V.; as far as we know, none of the patients had ever been under antisyphilitic treatment. As we see by the table, Argyll Robertson's phenomenon was in four cases the only sign of syphilis. It is well known that this phenomenon is frequently an additional finding in syphilitic patients treated for other diseases; Faber's researches distinctly show this circumstance. Thus the whole group of latent syphilis comprises 41 cases in 738 patients, or 5·6 of them all, 36 per cent. of the syphilitic. Among these we find 30, or 4 per cent., of the whole group where the W.R. is the only sign of the specific infection. Even if this figure is too high, being rather about 2·5 per cent. or less, it is high enough to demand our full attention, and it raises the following two questions, already put forward by Scheel.

Problems Arising.

Firstly, is it necessary to perform a Wassermann on all patients admitted to a medical department?

This question must be answered in the affirmative when the patients are from a large city. The gain is not only that in some doubtful cases the exact therapeutic method which alone can bring about the cure is applied, but also, as Scheel strongly emphasises, the patient undergoes a special examination in order to discover signs of an active process, if possible. There is in these cases special reason to emphasise the great importance of such a thorough examination of the central nervous system as cannot be carried out on all patients admitted to a medical department. Often enough it has been pointed out that one naturally cannot conclude that the disease is due to syphilis because the W.R. is positive, and the frequency of these cases alone shows how much caution is demanded in this respect.

Secondly, should all these cases be treated? This is not as easy to answer as it might seem, because it is often of vital importance to the patient from a social point of view not to be treated as syphilitic. Even if it is usually possible in a hospital to adopt therapeutic methods without awakening suspicion in those around the patient, this is not always possible in daily life, and a look at Table IV. shows that the syphilitic virus in these cases has been a particularly inactive one, in spite of the great strength of the W.R. in several of them (Table III.). It seems to me that the only way to decide this difficult question lies in a consideration

TABLE V.

No.	Age.	Sex.	Clinical symptoms of syphilis.
1	64	Man.	Saddle-nose.
2	73	,,	Argyll Robertson pupil.
3	57	,,	,, ,, ,,
4	72	,,	,, ,, ,,
5	69	,,	Aortic aneurysm.
6	86	Woman.	Cicatrices palati duri et mollis.
7	78	,,	,, ,, ,,
8	66	,,	Tabes dorsalis.
9	74	,,	,, ,,
10	64	,,	Argyll Robertson pupil.
11	41	,,	Saddle-nose.

of the ages of the patients. Even if a careful clinical examination of all organs can detect no symptoms of syphilis whatever the patient must be treated as thoroughly as possible if he is less than 50 years of age,

while I should prefer to wait for clinical symptoms if he is older. An essential thing in these cases is that the patient's private doctor is informed.

The generally accepted opinion that a positive W.R. means that the syphilitic infection is still active is based, so far as I can see, mainly upon the following two observations: (1) that the W.R. generally becomes negative during the treatment that cures the manifest syphilitic symptoms; (2) that a formerly negative W.R. can be changed into a positive one, when the old disease breaks out again or new symptoms occur.

From the first observation no other conclusion may be drawn at the moment than that the positive W.R. is influenced by the treatment; it does not justify the assumption that because the W.R. has become negative the patient's syphilitic infection has been cured. The second observation will have no value in this connexion until it has been proved that the change from a negative into a positive reaction is almost always followed by clinical symptoms, or that these arise much more frequently in the presence of a positive than of a negative W.R. We are, so far as I know, still waiting for the answer to these questions—an answer which only can be given by examinations made on a great number of syphilitic patients through several years, watching for new syphilitic symptoms or changes in those already existing and comparing them with the results of the Wassermann test.

When among 114 cases of syphilis we are able to discover no less than 30 in whom the syphilitic infection can only be discovered by the examination of the blood, in spite of the fact that the infection in many of the cases dates from several years back, this striking observation throws a different light on the prognostic value of the positive W.R. than that mentioned above, and the question arises, Where in the body are the substances formed which produce the positive W.R.? To the five post-mortem examinations mentioned above I am able to add two more. One of the patients (No. 7 in Table III.) died later; a careful examination of all organs, including the brain, could detect no syphilitic changes whatever. In the case of another patient, a woman, 72 years of age, who had been a prostitute for several years and had contracted syphilis when 20 years old, I could detect only an Argyll Robertson pupil as a clinical sign of syphilis; cerebro-spinal fluid was normal in all respects; the blood showed a positive W.R. (0–60–100) on three separate occasions. She died from carcinoma of the stomach; at the post-mortem examination I could not find any sign of a syphilitic change in the brain or any other organ. A careful microscopical examination of brain, liver, aorta, kidneys, adrenals, pancreas, and spleen showed only senile changes and a slight chronic nephritis due to arterio-sclerosis.

It is difficult to bring these findings into accordance with the generally accepted opinion that the positive W.R. indicates a still active syphilis, and that the antibodies that produce the W.R. are formed in the organs where the syphilitic inflammation has taken root. Does the positive W.R. in these cases indicate that somewhere in the body, perhaps in the bone marrow, there still is a depôt of spirochætes from where the antibodies come, or does the positive W.R. mean that the syphilitic infection is dead, while the antibodies are still present in the blood? If the first supposition is right we find an analogy in the Widal reaction, which sometimes persists for years in patients treated for typhoid fever; if the second comes nearer to the truth, the analogy lies in the Pirquet reaction in tuberculosis, which is still present even if the specific lesions are calcified.

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THE ACTION OF QUININE ON PREGNANT UTERUS.

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THE physician in the tropics is frequently called upon to treat an attack of malarial fever in a pregnant patient, and is invariably asked his opinion on the effect that quinine will have in precipitating labour. Our knowledge on the action of this alkaloid on pregnant uterus has, up till now, been based mainly on clinical experiences. We know that quinine can induce labour, yet if given as an ecbolic agent it often as not completely fails. H. P. Dimmock (1893) considered, as the result of a large practical experience gained at Bombay, that quinine in the ordinary therapeutic doses of 5 to 10 gr., three times a day, could be given with safety during pregnancy. W. C. Swayne and E. Russell (1919) discussed in 1919 the trial of a herbalist who was tried before the Recorder at Bristol on a charge of procuring an abortion by quinine. The Recorder, in his summary, asked the jury to decide whether quinine was a noxious drug: (1) in ordinary doses, (2) in large doses. The jury replied to (1) No; to (2) Yes, and these answers express the popular and current opinion held on the ecbolic action of quinine. J. E. Atkinson (1890) in an able summary of the clinical evidence considered that the ecbolic action of quinine was largely due to an idiosyncrasy of the patient. His conclusions were as follows:—

(1) The cinchona alkaloids have not a fixed and definite influence in causing contractions of the uterus.

(2) An oxytocic action is occasionally produced by these remedies. Their action depends on idiosyncrasy, as in the other idiosyncratic reactions to cinchona, it is impossible to tell in any given subject its manifestations.

(3) There is some evidence that the action is only excited under large doses, and in debilitated subjects.

(4) Cinchona and its derivatives should be employed during pregnancy with great circumspection, and should be at once withheld upon the supervention of symptoms indicating a uterine motor influence.

The majority of the writers on this subject have failed to consider a very important additional factor that occurs during the course of a malarial attack—viz., death of the fœtus from the effects of high temperature. The action of quinine in controlling the malarial fever, and so preventing inter-uterine death of the fœtus, far outweighs any effect this drug may have in precipitating labour. The ecbolic effect, as I will now proceed to show, only occurs under certain conditions.

Technique.

The test animal was killed, and the uterus was excised as rapidly as possible and placed in a bath of Ringer's solution containing traces of magnesium chloride at 37° C. After opening the abdomen an incision was made through the centre of the vagina, the cut vaginal end was lifted up with forceps, and the broad ligament divided throughout its length so as to free the left horn of the uterus and ovary on this side. The right horn of the uterus was divided from the left by cutting through the upper end of the cervix. The left horn and its fœtal contents (moderately advanced in gestation) were removed to the bath. The vaginal end was fixed to a glass tube bearing a platinum needle, and the ovarian end by a platinum needle which was attached by a hair to a writing lever. The recording of the contractions was done on the drum by a glass frontal writer, described by Lovatt Evans (1919). The bath was kept at a constant temperature of 37° C., and a continuous supply of oxygen was maintained by means of a fine spray of this gas delivered from the bottom of the glass holder fixing the vaginal end. Except in one experiment the lever at the writing end was counterbalanced by a heavy weight. The bath, apparatus, &c., was of a general type described by H. H. Dale and Laidlaw.

The standard base solution was prepared as follows:—

One g. of anhydrous base was dissolved in 27 c.cm. N/HCl to form the soluble bihydrochloride, and about 120 c.cm. of distilled water were added to make the volume up to 150 c.cm.; 27 c.cm. of N/NaOH were slowly added, constantly

shaking in order exactly to neutralise the whole of the hydrochloric acid. The volume was then made up with distilled water to exactly 200 c.cm. in a measuring flask. The standard solution was a 1-2000 solution of anhydrous base in normal saline—i.e., 1 c.cm. contained 0·5 mg. of anhydrous base. The requisite amount of NaCl was formed by the action of the HCl and NaOH. This solution was warmed over a water-bath and added to the uterine bath in the required doses. Quinine and the other cinchona alkaloids can only circulate in the blood in the form of a base, which acts as an alkali; for this reason the base was chosen instead of acid salts.

The Effect of Quinine Base on the Pregnant Uterus.

In a paper read before the Therapeutic Section of the Royal Society of Medicine I pointed out that the dextrorotatory cinchona alkaloids—i.e., cinchonine and quinidine—had a greater action than the lævorotatory isomerides—i.e., cinchonidine and quinine—in increasing the amplitude and rhythm of uterine contractions in non-pregnant guinea-pigs. This finding probably holds good for pregnant muscle as well, but I should have required much more material conclusively to prove the point, as the variations in response to different stimuli are considerable when one is testing pregnant uterus. As the object in this research was to explain the action of quinine on the pregnant uterus, my tests were mainly carried out with this alkaloid. One can safely say with regard to the action of these cinchona alkaloids, that whatever effect quinine has on pregnant uterus, the others will only differ from each other in degree of action.

TEST 1.—*Guinea-pig's uterus.*—4 mg. of quinine base was allowed five minutes' contact and was then thoroughly washed away with three changes of Ringer's solution at 37° C. The capacity of the bath was 175 c.cm., this corresponds roughly to a concentration of 1-44,000. After the uterus has settled down to its normal rhythmic contractions 4 mg. of quinidine base was next allowed five minutes' contact. After washing the uterus free from quinidine cinchonine was tested, but owing to the insolubility of the base the same dose of alkaloid was tested, dissolved as a hydrochloride. All three alkaloids caused a marked increase of tonus in concentrations of 1-44,000. As a result the uterus is contracted rigidly round the fœtus. The membranes remained intact in spite of the contractions, as the rigidly contracted os gave sufficient support to prevent their rupture.

TEST 2.—*Rat's uterus.*—Guggenheim (1912) showed that histamine, which caused a marked contraction of the uterine muscle in all other species of animals, when tested on rat's uterus caused relaxation instead of contraction. In this test the pregnant uterus of a white rat was used, and the four alkaloids quinine, hydroquinine, quinidine, and hydroquinidine were tested alternately. The alkaloids were made up as a 1 per cent. solution of anhydrous base dissolved in the requisite amount of N/HCl to form bihydrochlorides. 2 mg. of each alkaloid were placed in a 150 c.cm. bath for five minutes, and then thoroughly washed away with Ringer's solution. The uterus was allowed to settle down to the rhythmic contraction of the excised pregnant uterus. This test shows that quinidine and hydroquinidine are slightly stronger in their action on rat's uterus than quinine and hydroquinine. With none of the four alkaloids is the amplitude of the normal rhythm increased; the rhythm is accelerated and the relaxation diminished, so that the main effect is some increase of tonus. There was no dilatation of the os uteri.

Effects of Different Concentrations of Quinine Base on the Pregnant Uterus.

In a recent paper King and the present writer showed that when a single dose of quinine was taken on an empty stomach by one of us, the concentration of quinine in 5 c.cm. of blood varied with the size of the dose ingested, thus:—

(*a*) After 1 g. of anhydrous quinine base dissolved as bisulphates (approximately 20 gr. of sulphate). The concentrations found in the blood were: at the first hour, 1-150,000; second hour, 1-187,000; third hour, 1-225,000.

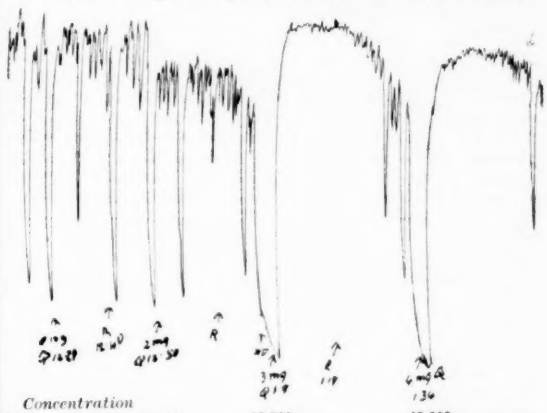
(*b*) After 0·5 g. of anhydrous quinine base (approximately 10 gr. of sulphate): at the first hour, 1-250,000; second hour, 1-280,000.

(*c*) After 0·25 g. of anhydrous quinine base (approximately 5 gr. of sulphate): at the first hour, 1-378,000; second hour, 1-750,000.

These results indicated the necessity of testing the effect of different concentrations of quinine on the pregnant uterus.

TEST 3.—*Guinea-pig's uterus.*—In this test increasing doses of anhydrous quinine base commencing with 0·5 mg. were added at intervals of two minutes without washing out; the amount was gradually increased until a total of 4 mg. had accumulated in the 150 c.cm. bath. This concentration of 1-37,500 produced a state of persistent tonus previously described, and to show its sustained character it was recorded for 30 minutes. This test shows that with a 0·5 mg. dose—i.e., 1-300,000 concentration, there was no effect seen. With 1 mg.—i.e., at 1-150,000, the amplitude was increased and somewhat sustained. It was not until a concentration of 1-37,500 was attained that the uterus was maintained for a space of 30 minutes in a state of high tonus.

TEST 4.—*Guinea-pig's uterus.*—In this test the whole dose—i.e., 1, 2, or 4 mg.—was put into the bath. After each test



GRAPH 1.—Showing the effect of different concentrations of quinine base on pregnant guinea-pig's uterus. (The mark R indicates the washing out with Ringer's solution.)

the uterus was well washed with Ringer's solution and allowed to relax before the next dose was tested.

1 and 2 mg. of quinine base in a 170 c.cm. bath—i.e., a concentration of 1 in 170,000 and 1 in 85,000 respectively—produced little effect on the contractions of this pregnant uterus. The 3 and 4 mg. doses (1-56,500 and 1-42,500) produced a tonus effect. On this uterus a small hole was now cut over the fœtal sac, and a 4 mg. dose was again given. The contraction induced by this dose of quinine forced the membranes through the rent and they ruptured. It was difficult to see what was happening through this depth of Ringer's fluid. After rupture of the membranes one saw that the hole was too small to allow the fœtus through. Washing with Ringer's solution caused relaxation of the tonus, which was renewed on adding a further dose of 2 mg., producing a concentration of 1-85,000.

GRAPH 2.—Showing the effect of 1 mg. (1-170,000) of quinine base on the pregnant uterus of a guinea-pig which was accidentally wounded. After the quinine was introduced definite labour pains set in and the fœtus was driven through the accidental tear in the uterus. (The time record indicates intervals of 10 seconds.)

Action of Quinine on the Uterine Muscle.

We know that during labour the longitudinal muscles of the upper uterine segment act as the driving force in expelling the fœtus from the uterus; synchronously with this contraction the circular muscles of the lower uterine segment relax to allow the head to pass through this narrow segment of the uterus. In all these experiments with quinine on the pregnant uterus, one saw that the contractions equally affected both the longitudinal and circular fibres. In spite of the violent contractions

produced by stimulation of the longitudinal fibres, the os remained tightly closed, so that the fœtus still remained in the uterus. On one occasion when a hole was made through the uterine wall the membranes ruptured, but the fœtus was still retained.

TEST 5.—The left horn of the uterus, in being cut away from the right horn, was accidentally incised by the point of the scissors. This was not noticed at the time and the uterus was placed in the bath for testing. In this experiment the weight on the lever was small. 1 mg. of quinine was placed in the 170 c.cm. bath, marked Q 1 in the graph. A violent contraction of the uterus occurred and labour pains set in, and the whole of the uterine contents were driven through this artificial hole in the side of the uterus. The record is shown in Graph 2.

Summary of the Experiments.

The action of quinine in certain concentrations causes contraction of both the longitudinal and circular fibres of the uterus. The effect produced depends on the concentration of quinine present—weak concentrations 1–300,000 have no effect; concentrations of 1–150,000 produce contractions under certain conditions, whilst a concentration of 1–44,000 produces a tonic spasm, which, if sustained, would cause asphyxia of the fœtus from constriction of the placental sinuses. This concentration could only be attained if the patient was nearly poisoned by a large dose of quinine. The degree of concentration in the blood varies with the dose taken and on individual susceptibility depending on the rate of absorption. Cinchonism is correlated with the concentration of quinine present in the blood and varies with different individuals, and is more frequently seen with weak and anæmic persons. Concentrations of 1–150,000, such as occur with large doses, increase the strength of the intermittent uterine contractions, and if some exciting cause was present—e.g., weak membranes or a patulous or dilated os—the pressure produced by the increased contractions might be sufficient to cause rupture of the membranes or dilatation of the os, and so bring on labour.

Therapeutic Recommendations.

1. The controlling of the fever by quinine or other cinchona alkaloids must be the first objective in the treatment of these cases. We know that high temperatures soon cause death of the fœtus, and this factor is sufficient to induce premature labour. The mother's temperature should be carefully watched and prevented from exceeding 103° F. by sponging, &c.

2. The avoidance of large doses of these alkaloids. As soon as the diagnosis of malaria is made, which is an urgent matter in pregnancy, quinine or quinidine should be given at once as the case requires. It is better to divide the doses into 2½ or 5 gr. doses given every two or four hours. 20 gr. a day is sufficient, and ample to control any attack of malarial fever.

3. The employment of general methods for the prevention of miscarriage—viz., complete rest in bed and the judicious use of opium in allaying any mental excitement. When the child is dead or the miscarriage inevitable quinine should be given in ordinary doses and the case treated on general obstetrical lines.

I must finally express my gratitude to Dr. H. H. Dale, F.R.S., for permitting me to work in his laboratory, and for the help and advice he gave me during the course of these experiments.

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ROYAL UNITED HOSPITAL, BATH.—At the close of 1920 there was an adverse balance of £18,000 against this hospital. The National Relief Fund has granted the institution £12,500 from the £700,000 set apart to help out the war deficits of voluntary hospitals.

AN UNUSUAL FATAL CASE OF INFECTION WITH B. ENTERITIDIS OF GAERTNER.

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IN a recent issue of THE LANCET, A. B. Rosher and G. Selby Wilson[1] describe a case having many similarities to enteric fever, but due in all probability to infection with the *Bacillus enteritidis* of Gaertner. Their report has recalled an unusual fatal case of infection with the same organism, seen by me during the war, which amplifies many of their findings. The notes of the case are briefly as follows:—

Pte. J., aged 25 years, became ill on Nov. 20th, 1917, with shivering and pains in the head and limbs. High fever was present, without pulmonary or intestinal symptoms, and a provisional diagnosis of trench fever was made. Eight days later the patient suddenly had a "fit," and bit his tongue during the convulsion. Next day he appeared better and was transferred from the field ambulance to a corps rest station. Almost immediately another convulsion took place, and he was sent on to a casualty clearing station, where he was first seen by the writer. After admission, 12 convulsions occurred within a few hours, and he became semi-comatose. A specimen of urine was obtained, but contained only a trace of albumin. On the suspicion that the case might be cerebro-spinal meningitis, lumbar puncture was carried out on Dec. 2nd, but the fluid was quite clear and contained no excess of cells. Signs of pulmonary involvement now developed, and within three days the base of each lung was found to be consolidated. A specimen of urine, examined on the 7th, was decidedly smoky, and contained red blood corpuscles and a large amount of albumin. He died during the afternoon of the 7th, 17 days after the onset of his illness. From Nov. 29th, until death occurred, he remained in a semi-comatose state. Vomiting occurred frequently during the illness, but there was never diarrhœa at any time.

Since the man was in various hospitals no complete temperature chart is available. He is known, however, to have had high fever for over a week after the onset of the illness. On admission to the casualty clearing station the temperature was subnormal, and remained so until three days before death, when it rose to 102 F. at the time when signs of pulmonary involvement became manifest.

Post-mortem.

A post-mortem examination was made 16 hours after death. There was no œdema of the face or limbs. Herpes was present on the lower lip. On removing the calvarium very striking œdema of the cerebral meninges was found. In section the brain substance showed many "puncta cruenta," but no actual hæmorrhages. An excess of fluid was present in each lateral ventricle. The pericardial sac was normal and the heart healthy. The air-passages, from the pharynx down, were removed intact along with the lungs. The trachea was seen to be half-filled with yellowish pus, often in the form of small, worm-like masses. The mucous membrane, when the pus was removed, was found intensely congested and ulcerated in places.

The lungs were voluminous, and showed many petechial hæmorrhages beneath the pleuræ. The upper halves of each organ were somewhat emphysematous, and the finer bronchi in this situation did not contain any pus. The lower parts of each lung were irregularly consolidated, some areas being much firmer than others. In section the appearance was extraordinary. Each small bronchiole stood out as a bright lemon-yellow spot from which, on pressure, a small worm-like purulent cast could be squeezed out. Each of the bronchioles was surrounded by a wide zone of hæmorrhage, forming a ring about the size of a shilling. Further away from the bronchioles the general appearance of the lung tissue was an almost uniform deep purple colour. The results of examination of the pus from the bronchi will be referred to later on.

The peritoneum was normal, and on careful examination of the stomach and intestines no trace of ulceration or of any inflammatory change was found anywhere. The fæcal material in the colon was of normal type, and contained neither mucus nor blood. The liver was somewhat fatty, but not otherwise unhealthy. The spleen was distinctly enlarged, and the pulp very soft. The kidneys presented

[1] A. B. Rosher and G. Selby Wilson: A Case of Enteric Fever due to the *B. enteritidis* of Gaertner, THE LANCET, Jan. 1st, 1921, p. 16.

many changes of interest. Both were large, and weighed together 402 g. They were very firm to the touch, and the capsules were tensely stretched. The capsules were definitely adherent, but could be removed with a little difficulty so as to cause only small tears of the cortical tissue. In section the cortex was of a deep purple colour, and the normal markings were obliterated. The medulla also shared in the intense congestion. The whole appearance corresponded to an acute hæmorrhagic nephritis, and this was confirmed by histological examination.

One eyeball was removed for examination. A condition of early "choke-disc" was found, but there were neither white spots nor hæmorrhages in the retina.

Since this case occurred at a time when influenzal broncho-pneumonia was just beginning to be prevalent, associated at times with nephritis, a diagnosis of influenza at once suggested itself in this case also. At the autopsy, moreover, the macroscopic lesions in the lungs appeared typical of influenzal broncho-pneumonia. A film of the bronchial pus, stained by Gram's method, showed the presence of numerous small Gram-negative bacilli, which at first sight seemed entirely confirmatory of the influenza hypothesis. The organism appeared to be present in almost pure culture. Later, an examination of films from the spleen-pulp showed an abundance of similar small bacilli. Careful cultivations were made on plates of agar, smeared with rabbit's blood, as was in use at the time in the laboratory for the cultivation of Pfeiffer's bacillus. After 24 hours an abundant growth was obtained on all the plates, both from the bronchial pus and from the spleen-pulp. The colonies were, however, larger and more opaque than those of Pfeiffer's bacillus on the same medium, and their abundance caused doubts to arise of their nature. Subcultures were therefore made on ordinary agar and in peptone broth, with the result that the organism was found to be a motile bacillus, with a growth on agar resembling one of the typhoid-coli group. On testing the sugar reactions of the bacillus, glucose, mannite, and dulcite were fermented with the production of acid and gas, while lactose remained unchanged. Litmus milk was made acid, but was not coagulated. An agglutination test was thereupon carried out, using paratyphoid A and paratyphoid B antisera. Agglutination resulted with the paratyphoid B serum, but was only complete up to one-quarter of the full titre of the serum. The test with antiparatyphoid A serum was quite negative. A subculture was sent to the Lister Institute, and a report from there stated the organism to be a true *B. enteritidis* of Gaertner, the differentiation being confirmed by the requisite absorption tests.

Discussion and Summary.

The case described by Rosher and Wilson affords an instructive comparison with my own. My patient was only seen late in the illness, at first during an apyrexial period, and no suspicion of infection with an organism of the typhoid group ever entered my mind. Their case was observed from the outset, and the symptoms were such as to suggest a possible diagnosis of enteric fever. Their case fortunately recovered, and their diagnosis was made by agglutination reactions only. In my case the diagnosis was made by the more absolute method of isolating the organism in abundance from two situations after death. In both cases a suspicion of influenzal infection arose, dependent on the presence of broncho-pneumonic signs in the chest during life in one case and at autopsy in the other. It seems possible, from analogy with my own case, that the causal organism might have been isolated from the sputum in the other case also.

The chief points of interest which emerge from a consideration of the two cases appear to be: 1. Anomalous cases of infection with the *B. enteritidis* of Gaertner can occur, without any of the acute diarrhœal symptoms commonly associated with the "food-poisoning" group of organisms. 2. The possibility of obtaining the causal organism from the sputum in cases of infection with organisms of the typhoid and food-poisoning groups, accompanied by bronchitis, should not be forgotten. During the war I have on various occasions readily isolated either *B. typhosus* or *B. paratyphosus B* from the sputum in these infections where bronchitis (quite apart from actual broncho-pneumonia) existed. Bronchitis accompanied by expectoration is such a well-known complication of these fevers that this occasional added source of examination for the organism should not be lost sight of in cases where the ordinary routes (blood, fæces, and urine) fail. The isolation of a known pathogenic organism must always make the diagnosis more satisfactory than agglutination tests alone, and this is, of course, especially true where inoculated individuals are under investigation.

A SIMPLE PROCEDURE FOR THE ACCURATE ENUMERATION OF BLOOD CELLS AND BACTERIA

WITHOUT THE USE OF A COUNTING CHAMBER.

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Wright was the first to elaborate a method for determining the number of bacteria per unit volume of a given suspension without the use of a counting chamber. His method[1] consists in mixing equal volumes of human blood and the suspension to be counted, and preparing films from the mixture. The films are dried, fixed in perchloride of mercury, suitably stained, and the relative number of human red cells and of bacteria present in each field are counted. Taking the number of red cells per cubic millimetre of human blood to be 5,000,000, the actual number of microbes per unit volume is readily calculated. The introduction of this technique marked a great advance along the lines of simplicity and speed. However, it is apparent that the accuracy of the final results is dependent upon the knowledge of the exact number of red cells per cubic millimetre of the blood employed. We know, indeed, that not only does the number of red cells per unit volume of blood vary considerably in different persons, but also that the number of cells varies definitely in the same individual at different hours of the day. For this reason Wright's method does not claim to yield more than approximately accurate results, unless the number of human red cells in the blood employed be enumerated each time by careful counting in an accurate chamber. Futhermore, the less skilful technician may experience some difficulty in making films which give a fairly even distribution of microbes and red cells, owing to their difference in size. It is evident, also, that the method cannot be employed for counting human red cells, as there is no means of differentiating between the standard cells and the red cells to be counted.

The procedure hereunder described, although based upon the same general principles as Wright's method—namely, the easily recognisable differences between the cells to be counted and those taken as a standard, differs in that it can be used to count not only bacteria but also human blood cells, and that the standard consists of a permanent suspension containing an exactly determined number of corpuscular elements per unit volume.

The corpuscular elements selected for the preparation of the standard emulsion are the red corpuscles of the blood of a hen. The fowl should be young and in good health. The reasons for the selection of the red cells of the hen are the following:—

1. The cells are of uniform size.
2. They are of approximately the same specific gravity as mammalian red cells.
3. The cells are slightly larger than the human red cell or average mammalian red cell.
4. They are readily distinguished from mammalian red cells by their elliptical shape and the presence of nuclei,

[1] Wright, A. E.: Technique of the Teat and Capillary Glass Tube. London: Constable and Co. 1912.

which make it impossible to confuse them with mammalian red cells in a mixture of the two.

Preparation of the Standard Suspension.

Prepare a solution containing approximately 1·3 per cent. perchloride of mercury in sterile normal (0·85 per cent.) saline solution. Bleed the fowl directly into this solution, allowing approximately 1 c.cm. of blood to each 100 c.cm. of the solution. Agitate the recipient fluid gently while the blood is being added, so as to ensure a thorough mixture. Leave for one hour, shaking from time to time to prevent sedimentation of the blood. At the end of the hour centrifugalise *just enough* to deposit the red cells, pour off the supernatant fluid, and fill up to the original volume with a solution of 4 per cent. perchloride of mercury in normal saline solution. Allow the mixture to stand for six hours, occasionally shaking the flask or bottle. At the end of this time agitate the flask to emulsify the cells and then centrifugalise. Wash the cells twice with normal saline solution, each time emulsifying them before centrifugalising. Pour off the supernatant fluid, and fill up to the original volume with normal saline solution to which has been added a minute amount of perchloride of mercury—i.e., just enough to prevent bacterial infection.

The suspension is now ready for standardisation. As the result of a large number of experiments, I have arrived at the conclusion that a convenient suspension to work with is one which contains about 20,000 cells per cubic millimetre. Therefore, the suspension should be brought to this standard in the usual manner, using normal saline solution as the diluting fluid, and counting at least 1000 cells in each of 10 successive drops, or about 10,000 cells in all.

Standard suspensions thus made have been kept for eight months at ordinary temperatures without showing any change in the number or appearance of the corpuscles.

Determination of the Number of Red Cells in a Given Blood by Means of the Standard Suspension.

The blood, taken in the usual manner, is diluted 1 : 200, with a solution of 1·3 per cent. perchloride of mercury in normal saline solution. For example, one adds 0·1 c.cm. of the blood to 19·9 c.cm. of the mercury saline solution, previously measured into a test-tube, carefully washing out the blood pipette and thoroughly mixing the resulting dilution. The tube containing the blood dilution is shaken to secure an even distribution of the cells in the suspension and immediately 1 volume—e.g., 0·1 c.cm.—of the fluid is transferred to a dwarf test-tube. In the same manner the tube or bottle of standard suspension is shaken and an equal volume of this fluid is measured into the dwarf test-tube, which is agitated so as to mix the fluids thoroughly. A drop of the mixture is placed immediately upon a clean slide and covered with a coverslip, care being taken to avoid air bubbles. The drop should be only large enough to form a thin film between the coverslip and the slide, and not so large that the coverslip floats. A coverslip of convenient size is 22 mm. × 22 mm.

For counting, a magnification of about 350 is convenient; for example—one can use a Zeiss D achromatic objective, and a Zeiss No. 3 Huyghenian eye-piece. Into the eye-piece place a small diaphragm of black paper, in the centre of which is an aperture 4 mm. × 4 mm., which gives a field of convenient size. In counting one should avoid the extreme periphery of the area covered by the coverslip. The number of nucleated red cells and the number of non-nucleated cells in each field are enumerated. It is advisable to count two drops from the same mixture, and not less than 500 cells in each drop.

Calculation of the Number of Red Cells Contained in Each Cubic Millimetre of the Blood Examined.

Take the sum of all the nucleated cells counted, and the sum of all the non-nucleated cells. Divide the number of nucleated cells into the number of non-nucleated cells. Multiply this factor by the number of cells in each cubic millimetre of the standard suspension (20,000) and then by the dilution of the blood (200). The product is the number of red cells per cubic millimetre of the blood examined. It is clear that the method can equally well be applied to the counts of nucleated erythrocytes. In such a case the standard suspension must be made with non-nucleated red cells.

Example.—Suppose the standard suspension contains 21,000 nucleated red cells per cubic millimetre. The blood sample is diluted 1 in 200. A drop of a mixture of equal volumes of these two solutions is prepared for the microscope and about 50 fields are counted. The sum of the nucleated red cells in the 50 fields is 319; the sum of the human red cells in the 50 fields is 405.

$$\frac{405}{319} \times 21{,}000 \times 200 = 5{,}294{,}000.$$

Therefore the blood examined contains 5,294,000 red cells per cubic millimetre.

Leucocyte Count.

To determine the number of leucocytes in a given blood sample by this method the procedure is as follows:—

Into a dwarf test-tube measure 3 volumes of a 0·3 per cent. solution of acetic acid in distilled water, to which has been added 0·6 per cent. of a 1 per cent. solution of methyl-violet (6 B). Add 1 volume of the blood to be examined, mix carefully, and allow to stand for a short time until the human red cells are hæmolysed. Then add 1 volume of the standard suspension of nucleated red cells and mix carefully. Place a drop of the mixture on a clean slide and cover with a coverslip, observing the same precautions as in the case of the red-cell count previously described. For counting use the same objective and ocular as for the counting of red cells, but the paper diaphragm previously used in the ocular should be left out, and the nucleated red cells and leucocytes present in the whole field should be counted. The same total number of cells—i.e., about 500—should be counted as in the case of the red-cell determination.

The calculation of the number of leucocytes per cubic millimetre of blood is performed in the manner already indicated above—namely, by dividing the number of nucleated red cells into the number of the leucocytes, and multiplying this factor by the number of cells in 1 c.mm. of the standard suspension. If dilutions other than those here indicated are used the calculation will naturally have to be modified accordingly.

Example.—Suppose the standard emulsion contains 21,000 nucleated red cells per cubic millimetre. One volume of the blood to be examined is added to 3 volumes of the acetic-acid-methyl-violet solution, and mixed. To this mixture is added 1 volume of the standard suspension. Seventy fields are counted, giving a total number of 409 nucleated red cells and 145 leucocytes.

$$\frac{145}{409} \times 21{,}000 = 7445.$$

Therefore the blood examined contains 7445 leucocytes per cubic millimetre.

Enumeration of Bacteria.

For counting bacteria in a suspension the following technique has been adopted:—

A special standard suspension for this purpose is prepared as follows: The perchloride-fixed nucleated cells are washed several times with normal saline solution to remove the free perchloride, and then made up with sterile normal saline solution to a standard of about 30,000 per cubic millimetre. To secure sterility a minute amount of formalin is added. For the purpose of counting a mixture of 1 volume of the standard suspension, 1 volume of the bacterial suspension suitably diluted, and 1 volume of 0·5 per cent. methylene-blue solution is prepared and counted, as in the case of the blood count, enumerating the nucleated cells and the bacteria in each field.

Example.—Suppose the standard suspension contains 30,000 cells. The bacterial suspension is diluted 1 in 200. Into a dwarf test-tube is measured: 1 volume of the standard suspension, 1 volume of the diluted bacterial suspension, 1 volume of 0·5 per cent. methylene-blue solution, and the test-tube shaken to thoroughly mix the contents. A drop of this mixture is immediately transferred to a slide, covered with a coverslip, and counted as in the case of the white-cell count, except that an oil immersion lens is used. Eighty fields are counted, giving a total number of 500 nucleated red cells and 400 bacteria.

$$\frac{400}{500} \times 30{,}000 \times 200 = 4{,}800{,}000.$$

Therefore the bacterial emulsion contains 4,800,000 bacteria per cubic millimetre.

To compare the relative merits of this method with those of the counting chamber extensive series of comparative counts have been made. The accurate Bürker chamber made by Zeiss was used. As an illustration the following example may be given:—

To eliminate errors of sampling all of the test suspensions were prepared from a single sample of blood, made up with normal saline solution to a dilution of 1 : 100. Into each of five test-tubes was measured 5 c.cm. of this suspension, care being taken to secure an even distribution of the blood cells. To the tubes marked A, B, C, D, and E were then added respectively 6 c.cm., 3 c.cm., 7 c.cm., 5 c.cm., and 4 c.cm. of the mercury perchloride normal saline solution previously mentioned, giving final dilutions of the blood as follows:—

A, 1 : 220; B, 1 : 160; C, 1 : 240; D, 1 : 200; and E, 1 : 180.

The extent of dilution of the samples in the different tubes was unknown to me until after the actual counting

of the cells was finished. At least two separate drops of each dilution were counted, both in the case of the differential method and in that of the Bürker counting chamber. The details of the experiment are given in the following table:—

Test-tube.	Final dilution of same original sample of human red cells.	No. of human red cells per c.mm. (Average count of *two* drops.)	
		Differential method.	Bürker counting chamber.
A	1/220	5,509,000	5,456,000
B	1/160	5,366,000	5,326,500
C	1/240	5,419,000	5,270,500
D	1/200	5,238,750	5,387,000
E	1/180	5,401,000	5,546,000
	Average ...	5,386,750	5,397,200

In the case of the differential method, an average of 360 nucleated cells and an average of 550 human red cells were counted in each drop, making a total of 910 cells per drop. In the case of the counting chamber method, on an average 1030 cells per drop were counted. The average count for the two drops of the same suspension was in both cases taken as the figure representing the number of human red cells per cubic millimetre. Obviously, if it were possible to eliminate all errors of dilution, distribution, and enumeration, the final figures arrived at for each of the five dilutions would be identical. In an actual experimen t, however, identical results are not attained, and for this reason the average of the five is in both cases taken as the figure representing the actual number of red cells per cubic millimetre of the blood examined.

The close correspondence between the results obtained by the two methods is striking. By the differential method it is found that the blood examined contains 5,386,750 red cells per cubic millimetre, while by means of the Bürker chamber it is found to contain 5,397,200 red cells, which gives a difference between the results obtained by the two methods of 10,450—i.e., 0·19 per cent. If we examine the percentage deviation of each count from the average this is found to be 1·25 per cent. in the case of the differential method, while it is 1·46 per cent. in the case of the counting chamber method, although in the latter case a larger number of cells is counted. Furthermore, if we calculate the percentage deviation for the figures obtained from the counting of each individual drop by both methods, it is found to be 2·29 per cent. by the differential method and 2·46 per cent. by the counting chamber method.

Conclusions.

By careful procedure, and by counting the numbers of cells indicated above, it is evident that the method discussed in this paper yields extremely accurate results, which compare more than favourably with the results obtained by the use of a counting chamber. It furthermore possesses the following distinct advantages: (1) It can be used with equal facility for counting erythrocytes, leucocytes, and bacteria; (2) it does away with the use of a costly counting chamber; (3) it is quicker and less fatiguing to the eye.

CENTRAL MIDWIVES BOARD FOR SCOTLAND.—At a meeting of the Board held in Edinburgh, Sir J. Halliday Croom in the chair, the Viscountess Novar took her seat as a member of the Board. Sir Halliday Croom, in a valedictory address on his retirement from the Board, thanked the members for the loyal support he had received as Chairman, and referred to the pleasant and harmonious way in which the work had been carried out. On the motion of Dr. A. Campbell Munro, seconded by Sir Archibald Buchan-Hepburn, a hearty vote of thanks was accorded to Sir Halliday Croom for the efficient manner in which he had discharged the duties as Chairman of the Board since its formation five years ago. The Board also expressed its appreciation of the able and valuable services rendered by Mr. D. L. Eadie, the secretary. It was intimated that the new Board would be constituted early next month.

FURTHER RESEARCHES UPON ANTIMONY IN THE TREATMENT OF FILARIASIS.

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IN THE LANCET of Sept. 11th, 1920, one of us (G.C.L.), in conjunction with Dr. A. L. Gregg, published the details of a case of *Filaria bancrofti* infection treated by intravenous injections of antimonium tartaratum (tartar emetic). In this individual case no beneficial results were obtained, the infection persisting, even though 17½ gr. of the drug in all had been administered. We pointed out in that paper the great importance of doing prolonged examinations—both before, during, and after treatment—of measured quantities of blood, and indicated that that was the only way one could determine the efficacy or otherwise of the drug used. Since that time we have had the opportunity of studying two further cases of *Filaria bancrofti* infection; one in minute detail, the other not quite so fully, but still sufficiently so to draw conclusions as to the efficacy of antimony as a drug in the treatment of filariasis. The details of the two cases are as follows:—

CASE 1.—History: A. H., 30, an Indian native, was born and lived in Calcutta till he went to sea as a ship's steward at the age of 18. In this capacity he visited many parts of the world—East Africa, Bombay, &c.

Previous illnesses: No malaria; has had dysentery; no history of syphilis.

Present illness: For the last few years has been complaining of indefinite pains in the region of the stomach and liver; these at times have been acute, and vomiting has been associated with them. Lately the pain has been radiating to the right shoulder, and has been specially severe at nights. He came to hospital—to out-patients—to see if anything could be done for it. Admitted into hospital, his stools were found to contain *E. histolytica* cysts, and his night blood many filarial embryos. Examination: Heart and lungs normal. Urine: No albumin, blood, or sugar. Abdomen: Liver not enlarged; slight tenderness on deep pressure; no evidence of gall-stones or duodenal ulcer; spleen not enlarged; colon, no thickening.

Blood: R., 3,840,000; W., 5,200; Hb, 80 per cent. Night blood, many embryos of *F. bancrofti* present; 40 in 20 cubic millimetres of blood.

Fæces: *E. histolytica* cysts present.

Filarial condition: No evidence of any clinical signs of the infection present.

As the case presented such a good filarial infection, as evidenced by the embryos in the blood, it was resolved to do a very careful and accurate analysis of these before, during, and after treatment with antimonium tartaratum. Table I. gives these details. A study of this table brings out several important facts, and not the least interesting of these is the almost complete disappearance of the embryos from the blood when no treatment was being given between Oct. 20th and 26th. Why this took place is not clear, but it illustrates, if that is necessary, the importance of many examinations in such cases, and also the danger of concluding that a disappearance of embryos is necessarily associated with any individual drug one happens to be giving at the time. It is well known, of course, that when a severe attack of lymphangitis appears the embryos may disappear at once from the peripheral blood and not return again, but this explanation will not apply here, as there was no lymphangitis and the embryos reappeared in numbers again. After the ratio became more or less constant the injections of antimony were begun, and a glance at the table at once shows, just as in the case reported before,[1] that the drug had no effect whatsoever on the number of embryos circulating in the blood—that is, was not affecting the adult worms producing them.

Incidentally another drug, emetine, was tried at the same time as the antimony, this being given for the

[1] THE LANCET, Sept. 11th, 1920.

amœbic infection and in the hopes that it might influence the hepatic pain. It did so very effectually, as, after a few doses, the pains disappeared and did not return. Here, again, there was not the slightest effect on the filarial embryos. We have not put the record of

TABLE I.

A. Number of filarial embryos in 20 c.mm. of blood.
B. Number of grains of tartar emetic injected, these being given in the afternoons between 4 and 5 P.M.
The examinations were made at 11.55 P.M. on every occasion.

Date in 1920.	A.	B.	Date in 1920.	A.	B.	Date in 1920-21.	A.	B.
Oct.			Nov.			Dec.		
18	42	—	16	30	—	16	25	2½
19	36	—	17	22	—	17	20	—
20	46	—	18	15	1	18	15	—
21	2	—	19	12	—	19	20	—
22	0	—	20	21	—	20	20	2½
23	3	—	22	16	1	21	24	—
24	5	—	23	28	—	22	15	—
25	10	—	24	25	—	23	19	2½
26	9	—	25	26	1½	24	19	—
27	51	—	26	18	—	25	11	—
28	20	—	27	10	—	26	19	—
29	32	—	28	12	—	27	13	2½
30	33	—	29	26	1½	28	24	—
31	44	—	30	27	—	29	13	—
						30	18	2½
Nov.			Dec.			31	10	—
1	20	—	1	23	—	Jan.		
2	32	—	2	17	2	1	20	—
3	27	—	3	20	—	2	22	—
4	47	—	4	16	—	3	15	2½
5	25	—	5	29	—	4	10	—
6	46	—	6	15	2	5	20	—
7	29	—	7	30	—	6	12	—
8	21	½	8	40	—	7	20	—
9	37	—	9	30	2½	8	12	—
10	32	—	10	30	—	9	15	—
11	22	—	11	29	—	10	—	—
12	51	1	12	20	—	11	—	—
13	44	—	13	17	2½	12	—	—
14	26	—	14	22	—			31 gr.
15	25	½	15	20	—			

these doses upon the chart so as not to complicate it, but for those who are interested it may be stated that emetine hydrochloride injections were begun on Nov. 19th, and continued nightly—with the exception of the days when antimony was given—until Dec. 4th, 12 doses of 1 gr. each being administered in all.

CASE 2.—History: A. T., a native of India, was born near Madras and lived in that neighbourhood all his life till he came to England to study in July, 1920.

Previous illnesses: Enteric, no malaria, dysentery as a boy; again two years ago; cured by emetine injections.

Present illness: A month ago (November, 1920) pain developed in front of the internal malleolus of left leg. This was worse on walking. A Scott's dressing was applied and the pain disappeared. About the same time some slight œdema was noticed over the left tibia. Patient, a doctor, suspected filarial infection and examined his night blood. Embryos of *F. bancrofti* were found.

Examination: Systems nothing abnormal. Legs: left calf (14") bigger than right (13"); slight œdema along tibia. No enlargement of the glands in femoral or inguinal regions. Never had any inflammatory trouble in either leg, is definitely certain of this. No other signs of filarial infection.

Urine: No albumin, blood, or sugar.

Blood: R., 5,000,000; W., 6600; Hb, 100 per cent. Differential: P.M.N., 65 per cent.; L.M., 3 per cent.; L., 27 per cent.; E., 2 per cent.; T., 2·2 per cent.; M., 8 per cent. No malarial parasites. Blood looks quite normal. No eosinophilia. Sample of night blood—not measured—15 *F. bancrofti* embryos in a small film.

Diagnosis: Commencing elephantiasis without precedent inflammation. A rare condition; vide description by one of us (G.C.L.) (Journ. of Trop. Med. and Hyg., March 15th, 1911).

It was resolved to try antimony injections (tartar emetic) in this case also, but owing to the impossibility of the patient lying up completely extensive counts and examinations of the blood were not available. What

TABLE II.

Descriptions of A and B. as Table I.
Examinations at 11.55 P.M. on every occasion.

Date in 1920.	A.	B.	Date in 1920.	A.	B.	Date in 1921.	A.	B.
Dec.			Dec.			Jan.		
9	55	½	23	20	2	3	38	2½
13	41	1	27	31	2½	6	35	2½
16	40	1	30	60	2½	10	60	2½
20	45	1½						18½ gr.

was done was as follows. The patient came into hospital about 4 P.M., had his injection, stayed in the night—so allowing of his midnight blood being taken—and then went out to his work next morning. Table II. gives the result of the blood counts (measured quantities) and the dosage of antimony employed.

It will thus be seen that in this case also there was no beneficial effect from the antimony injections, and after the careful study of these two cases it is difficult to see how the drug can be of any use at all in such infections.

It is, however, by the intravenous route, that we must hope for future success, and we are now considering the possibility of trying other drugs in a similar manner. The arsenical group also appears to be useless, so unless some of the other metals prove efficacious little remains to be done and the treatment of filariasis will remain in its present unsatisfactory condition. Emetine, as we have shown in Case 1, also had no effect upon the infection.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF
ACUTE ASCENDING PARALYSIS
OCCURRING AS A COMPLICATION OF MEASLES AND TERMINATING IN RECOVERY.

BY C. R. BOX, M.D., B.Sc. LOND., F.R.C.P.

THE following case seems worthy of record on account of its rarity. The cord inflammation present was evidently either toxæmic or infective in character, ascending in type, and, from the dissociated character of the accompanying anæsthesia, presumably situate in the central grey matter. The case was under the care of Dr. R. W. Rix, of Sudbury, who made the notes.

A girl of 14 was taken ill on April 20th, 1920, and was kept in bed. On the 24th measles declared itself. The temperature was 103° F., the rash of average intensity, and the child was not more ill than is usual with measles. Two days later the temperature had fallen to 99°, and the patient appeared well on the way to recovery, but next day the temperature rose again to 103°, although no pulmonary complication could be detected.

During the night the child attempted to get out of bed and found that she could not stand. After this she had a constant desire to micturate but could not pass water properly, a few drops only coming away at each attempt. The next day when examined there was paralysis of all the muscles of both legs except the hamstrings and the flexors and extensors of the great toes; these muscles were extremely weak. The muscles of the abdominal wall were acting, although feebly. Tactile sensation seemed intact, but loss of appreciation of heat and cold came to light in a curious manner; the abdomen was painlessly burned by a hot-water bottle during an attempt to stimulate the bladder. The knee-jerks and abdominal reflexes were absent. The bladder was obviously distended and overflow incontinence occurred on coughing. The temperature was 102° and moist sounds were audible in the lungs. Later in the evening 20 ounces of urine were withdrawn by catheter, and the administration of urotropine in 10 gr. doses every four hours was commenced. The next day the recti abdominis were paralysed and the cough ineffective, although the intercostals were still working. The legs were quite helpless.

On the 30th—six days after the appearance of the measles rash and the fourth day of paralysis—I saw the patient. With the exception of very slight power of extension of the left foot the legs were completely paralysed; so also were the recti abdominis. The intercostals appeared weak and cough was ineffective. The patient also complained of slight loss of power in the left arm, which she discovered on attempting to use a small nail-file. Up to the level of the sixth dorsal segment appreciation of pain and of heat or cold was absent, although tactile sensation appeared to be intact. Sense of position was present: there was no limiting zone of hyperæsthesia. No definite loss of power and no defect of sensation could be found in the arms. The ocular fundi were quite healthy and there was no cranial nerve paralysis. The right knee-jerk was absent, the left very sluggish. The abdominal reflexes were in abeyance. During the period from the 27th to the 30th the temperature varied between 101° and 102.°

On May 1st there was evidence of commencing recovery, the cough becoming much stronger and the temperature lower. The next day the temperature became normal and voluntary movement of the toes appeared, followed later by movements of the ankles. From this time improvement was continuous. Recovery took place in the following order: Rotators of hip-joint and sensation of slight discomfort when pricked on the 4th. Abduction and adduction of both thighs with slight power of extension of knees, flexion of right knee and return of left knee-jerk on the 5th. On the same day the patient for the first time complained of the discomfort of the burn on the abdomen and the sense of heat and cold returned to the front of both legs. All movements of the legs were present on the 6th, and heat and cold sense had returned everywhere. On this day the patient passed water naturally for the first time since April 28th

The abdominal muscles contracted voluntarily two days later and the feet could be lifted off the bed. The knee-jerks returned and the plantar reflexes, the latter being doubtfully extensor. By June 8th the patient walked well with the exception of slight foot-drop on the left side. The knee-jerks gradually became exaggerated and the plantar response was extensor in type. For some time the bladder remained irritable, possibly on account of the urotropine. It was discontinued on the 13th. During the whole period of paralysis the patient was aware when the bowel was going to act, but at first could not control it; after May 29th, however, control was gradually re-established.

At the time of sending this report, seven months after the commencement of her illness, the only evidences of what the patient passed through are visible exaggeration of the tendon-jerks in legs and arms, absence of the superficial abdominal reflexes, and a very doubtful extensor response in one foot. Over a small area of skin at the back of the left knee she experiences a sensation of what she terms numbness where there is slight impairment of appreciation of heat and pain. Micturition is at times somewhat imperative and her legs easily become tired.

Reference to similar cases will be found in Sir Dawson Williams's article on measles in Sir Clifford Allbutt's "System of Medicine," and recovery appears to be the rule rather than the exception. Sir Thomas Barlow has recorded a case in which disseminated myelitis was found in a case of measles which proved fatal.

Devonshire-place, W.

PERCENTAGE AND FRACTIONAL DILUTIONS.

By WILLIAM FLETCHER, M.D. CANTAB.,

BACTERIOLOGIST, INSTITUTE FOR MEDICAL RESEARCH, KUALA LUMPUR, FEDERATED MALAY STATES.

MY excuse for writing this note, which may appear puerile and unnecessary to those who have had a mathematical training, is that most medical men have but little knowledge of figures, and I have seen them toiling, with knitted brows and well-sucked pencils, in their efforts to discover how to prepare, for instance, a 33 per cent. from a 50 per cent. solution; while well-known text-books devote several pages to tables for the purpose of making higher from lower dilutions.

The average civilised man can count two quite easily; for instance, he knows how to prepare a 40 per cent. solution from one of 80 per cent. by taking one part of the latter and making it up to two parts by adding an equal quantity of the diluent. This is the same thing as taking 40 parts and adding sufficient diluent to make 80. What is not generally realised is that all other dilutions can be prepared on the same principle; for example, a 30 per cent. solution can be made from one of 50 per cent. strength, by taking 30 parts of the latter and making it up to 50; or a 40½ per cent. solution can be prepared from one of 79½ per cent. by taking 40·25 c.cm. of the latter and adding sufficient diluent to make 79·5 c.cm. That is to say, an x per cent. solution can be prepared from a y per cent. solution by taking x c.cm. of the latter and diluting it sufficiently to make y c.cm.

The preparation of other fractional dilutions is equally simple. As everyone knows, a 1 in 10 (written 1/10) solution can be made from a 1 in 5 (1/5) solution by taking 5 parts of the latter and diluting it up to 10 parts, but it is not generally known that all dilutions can be prepared in the same way; that, for instance, a 1/97 dilution can be made from a 1/8 dilution by taking 8 parts of the latter and making it up to 97. In short, a $1/x$ solution can be prepared from a $1/y$ solution by taking y c.cm. of the latter and adding sufficient diluent to produce x c.cm.

By this method the medical man can not only calculate quickly but do it "in his head."

A TRI-ORCHID.

By V. R. SUNDARESA AYYER,

CAPTAIN, I.M.S.; COMMANDING NO. 15 SANITARY SECTION, KARACHI.

THE following note may be of interest, since I can find no record of a similar case in the medical literature at my disposal.

The patient, R., was an enrolled follower, aged 19, a native of the Trichinopoly District, in South India. He arrived at the Followers' Central Depôt, Kirkee, in August, 1918, and was medically examined when about to proceed in a draft for overseas service in October, 1918. A third testis was found above the left normal one, with a separate globus major and minor and a separate cord, distinctly traceable alongside the normal left cord up to the left internal abdominal ring. It was moored to the left wall of the left sac of the scrotum

above the normal left testis. The component parts of the third cord were easily felt, and the "testicular feel" on pressure over this gland was the same in every way as that over the other two normal glands.

The after-history of the patient is not recorded, as his present whereabouts cannot be traced.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

EXHIBITION OF CLINICAL CASES.

A MEETING of this section of the Royal Society of Medicine was held on Jan. 14th, Sir ANTHONY BOWLBY, the President, being in the chair.

Several interesting cases were shown, among which the following were included.

After-results of Ligature of Left Subclavian Artery for Aneurysm.

Mr. W. G. SPENCER showed a patient in whom the first part of the left subclavian artery was ligatured for aneurysm in 1899. When admitted to hospital at the age of 43 there was an aneurysm of the second and third part of the left subclavian artery the size of a duck's egg. He had had syphilis 14 years previously, and three years before admission he had been in a hospital for ten months suffering from (? syphilitic) bronchitis with profuse hæmoptysis, which was, however, diagnosed as incurable phthisis. He had a gumma on the left leg and another on the left thigh. In April, 1899, the first part of the left subclavian artery was ligatured, but pulsation in the aneurysm recurred and in the following June the vertebral and inferior thyroid arteries were tied by reopening the previous wound upwards, and the third part of the subclavian was tied through the axilla. The patient had now been readmitted complaining of pain along the course of the sixth to ninth left intercostal nerves. He was now 65, and he had a markedly emphysematous, rigid chest. There was no sign of the former aneurysm except the scars. A skiagram of the chest and also auscultation had failed to find positive evidence of a thoracic aneurysm.

The PRESIDENT remarked upon the successful issue of the operation, and said that the usual happening after ligature of the larger vessels for aneurysm was the subsequent development of intrathoracic aneurysm beyond the reach of further operative treatment.—Dr. F. PARKES WEBER said that he was interested in the fact that this patient must have had syphilitic disease of the lung at a time when its existence was denied.

Mr. SPENCER also showed a case of

Epithelioma Supervening in the Scar

eight years after the destruction of a hairy mole by X rays. The patient was a woman, aged 28, who had had a hairy mole on the left temple. Monthly exposures to X rays had been continued for two years. After the final exposure the scar had remained sound until three months ago. There was now an epitheliomatous ulcer at the outer angle of the left eye infiltrating the eyelids. Keratosis was present in patches over the scar area. He spoke of the danger of a treatment which left a burn-like scar for a condition not in itself serious, and which could be removed by incision.

Dr. J. A. BIRRELL showed a case of

Extreme Dislocation of the Heart into the Right Axilla.

The patient, a man aged 39, was passed fit for military service in 1915. Previous to that he had worked for 17 years in a pill factory and had apparently been free from any disease. In the winter of 1915-16 he developed a cough but was kept on duty, and in the following summer he collapsed from shortness of breath whilst "doubling" with a gas mask on. After another medical examination he was at once returned to duty. In 1917 he received a shrapnel wound in the right calf and popliteal region, but did not remember being struck on the chest. The wound was treated surgically under a general anæsthetic a few days later, and shortly after he developed fever which lasted three weeks, and he said that he wore a "pneumonia jacket." The temperature subsiding, he was transferred to England, where in 1918 he was told that his heart was beating in the wrong side of his chest, and he began to notice a sensation of thumping in the same position after exertion. He was discharged unfit for further service on account of gunshot wound and pulmonary tuberculosis. He now had a cough, the expectoration was yellowish-green, and repeated examinations failed to show the presence of tubercle bacilli or of elastic tissue. Pneumococci, streptococci, and micrococci catarrhalis were present, the temperature and pulse were normal, and he was short of breath on exertion.

On physical examination the heart was found to be dislocated so far to the right that the impulse could be felt in the fifth intercostal space in the right axillary line. Percussion showed corresponding dislocation to the right, so that the left border of the heart was in the fifth right space, three inches from the middle line of the body. There were no murmurs, but the aortic second sound was very accentuated and was best heard in the dome of the axilla. On X ray examination the heart was seen to lie close against the outer wall of the right chest, and the diaphragm was one inch higher than normal. The outlines of the aorta could not be defined. The trachea could be seen at the right border of the sternum, and when the patient swallowed barium sulphate the shadow could be followed down the right border of the vertebral column until it crossed the spine to reach the stomach.

Clinical examination showed that there was considerable contraction of the right lung. The whole of the right side of the chest was dull to percussion and very dull from the level of the sixth dorsal spine to the lower costal margin. Cavernous breathing and whispering pectoriloquy were audible in the right interscapular and infraspinous areas, and at the inferior scapular angle râles were occasionally to be heard, especially after a cough. There was no clubbing of the fingers, the dorsal spine was concave to the right, and the trachea was seen to be dislocated to the right of the middle line. No foreign body could be demonstrated in the air passages. There were signs in the right lung indicative of collapse of the right lower lobe. The Wassermann test of the blood was negative.

The case was shown: (1) because of the extreme dislocation of the heart; (2) because of the difficulty in explaining the condition of the right lung, which did not appear to be due to bronchiectasis or to tuberculosis, but was suggestive of the pleurogenous pneumonia of Sir Andrew Clark. Were it not a fact that the patient had had a history suggesting pulmonary disorder *before* the shrapnel wound an explanation could be found for the state of the right lung: that its present condition was the result of (*a*) pneumonia developing at the time of the shrapnel wound of the leg or just subsequently; (*b*) that it was the result of massive collapse of the lung—though there was no evidence to support the view that massive collapse of the lung could persist and lead to such disorganisation of the right lung as was shown in this case.

Dr. F. S. LANGMEAD suggested that the case was one of congenital dextrocardia, and that further displacement to the right side had been caused by fibrosis of the lung following pneumonia.—Dr. WEBER also said that dextrocardia was the probable explanation, and agreed with Dr. Birrell that displacement of the heart had occurred as the result of collapse of the lung at the time of the injury and pleurogenic pneumonia.

Dr. V. WILKINSON showed a case of

Mycotic Aneurysm of the Right Calf.

The patient, aged 37, formerly a pianoforte-maker and now a discharged soldier, was recently admitted to hospital because a few weeks previously he developed severe pain and swelling of the right calf. These symptoms abated somewhat, and it was then discovered that the swollen calf pulsated. In the past he had suffered from "rheumatic pains" up to the age of 14 years, and four years ago he contracted syphilis. He entered the army in 1916 and was discharged with valvular disease of the heart in February, 1919. Since leaving the army he had become shorter of breath, had begun to sweat rather profusely at night, and pain had developed over the heart. He was first admitted to hospital in June, 1920, when double mitral disease was found; the spleen was enlarged, the fingers were clubbed, there was occasional evening temperature, and the Wassermann test was found to be positive. The heart was not enlarged. He was readmitted to hospital early in the present month. He said that 14 weeks previously he noticed pain in the right leg just above the ankle on the inner side. Fomentations gave relief and nothing further was noticed until four weeks ago, when the calf of the right leg became swollen and painful.

At the present time the right calf was obviously enlarged, was tender to the touch, and pulsated. The pulsation ceased and the swelling diminished in size when the right femoral artery was compressed. The heart was now found to be enlarged to the right and to the left, and a loud, early diastolic murmur indicating aortic regurgitation had developed since he was admitted to hospital last year. In addition to the other signs then found the patient had begun to look ill, there were blood and albumin in the urine, and a constant rise of temperature, loss of weight, and progressive secondary anæmia, the leucocytic count now amounting to 6000 per c.cm.

The case was shown as a rather unusual example of mycotic aneurysm occurring in malignant endocarditis.

The PRESIDENT said that aneurysms due to septic infarction were of two kinds. In the first blood was extravasated into the soft tissues from a hole in the vessel at the site of the embolus and thus produced a false aneurysm, and in the other a true aneurysm was produced by dilatation of the vessel itself. He thought that this was a case of false aneurysm. It had to be remembered that septic embolism of the brain was a likely event in such cases, and he did not favour any more active procedure than firm bandaging of the calf.—Dr. WEBER said that the case was an example of a variety of malignant endocarditis which was invariably fatal, a matter to be considered in local treatment.—Mr. C. H. FAGGE asked whether it was agreed that the aneurysm was in connexion with the posterior tibial artery. He favoured the opinion that the embolism was in one of its muscular branches.

Mr. PHILIP TURNER and Dr. L. MANDEL showed a case of

Submammary Tumour of the Chest Wall.

The patient was a widow, aged 46, with one daughter, aged 18 years. She complained of a tumour in the region of the right breast, which had developed in the course of the past few months. About eight or nine years ago she received a severe blow on the right side of the chest from the open door of a moving railway-carriage. A swelling was noticed two or three weeks afterwards, and the doctor who was attending her told her that she had broken three ribs. This swelling never disappeared completely; some irregularity could be felt beneath the right breast, but she said that in appearance it was not different from the other side. About two or three months ago she noticed that the right breast was getting more prominent, and that there was a hard lump to be felt. She said that the present tumour occupied much the same position as the "irregularity" which persisted after the injury to the ribs. There had been little pain; her general health had not been affected, though she thought that she had lost weight to a slight extent, but the lump had steadily increased in size.

On examination the right breast was seen to be unusually prominent, and on palpation this was found to be due to a hard swelling about the size of a fist, which was adherent to the chest wall by a broad attachment. Its surface was lobulated and, especially on the outer side, it had an over-

hanging edge. The skin was freely movable over the tumour and there was a good thickness, probably breast, between them. The nipple was normal and similar in appearance to that of the other side. The patient had had no cough, and examination of the lungs showed no abnormal physical signs. The tumour was considerably opaque to X rays, so that it was difficult to get a satisfactory view of the underlying ribs. There did not appear to be any destruction of bone, but the upper border of the fourth rib showed a clearly defined defect near the costo-chondral junction. Seen in profile the tumour showed some irregular ossification, not directly continuous with the ribs. It did not appear to extend into the cavity of the chest, and no intrathoracic abnormality could be seen. The X ray appearances suggested that the tumour was an ossifying chondroma connected with the fourth rib. The rapid increase in size favoured the probability of the growth being a sarcoma with secondary calcification and ossification, though the X ray examination, in the absence of any erosion of the ribs, seemed to be against this view.

Since the growth had not extended inwards, and as there was no indication of secondary growth or direct invasion of the lung, its removal was called for.

SECTION OF OPHTHALMOLOGY.

EXHIBITION OF CASES AND SPECIMENS.

A MEETING of this section of the Royal Society of Medicine was held on Jan. 14th, Dr. JAMES TAYLOR, the President, occupying the chair.

Foreign Body in the Eye.

Mr. G. WINFIELD ROLL showed a man who had had a Steel Fragment in the Eye 18 years. When seen by the exhibitor some weeks after the accident the vision was 6/6 and the media were clear. There was now a very small nebulous area near the limbus. As the foreign body was encysted, the vision good, and the eye quiet, he did not think there was any need for interference. Latterly vision was 6/18, but the eye gave no trouble, though an area of atrophy had appeared below the foreign body. Provided a foreign body in the eye was aseptic, he did not think there was any limit to the time it might remain in the eye.

Mr. W. T. HOLMES SPICER thought the slight changes seen in the choroid region might be due to the presence of the fragment, a local siderosis.

Large Inter-marginal Cups without Glaucoma.

Dr. A. HUGH THOMPSON showed a patient whose discs presented Large Inter-marginal Cups with, as yet, no signs of glaucoma. The patient, a woman aged 52, came for glasses; her vision was 6/12, she had lens opacities and hypermetropia. The eye tension was normal, and she never saw rainbow colours. The disc cups were now at a doubtful stage; some would regard them as glaucomatous, others would be uncertain whether they were physiological or glaucomatous.

Cases of Coloboma.

Mr. J. H. PARSONS showed a patient with Coloboma confined to the optic discs.—Mr. MALCOLM HEPBURN demonstrated a case of Coloboma of the Macula Region. There was a pearly-white centre, with a definite ectasia on the temporal side of the patch, and a border of pigment ran around the edge. Had it been an inflammatory patch there would have been more pigment proliferation. True coloboma of the choroid was very rare.

Photographing and Demonstrating the Interior of the Eye.

Professor SALOMONSEN, of Amsterdam, exhibited a series of ingenious instruments used by him for the purpose of demonstrating the interior of the eye to students, and also for obtaining photographs of the same.—Mr. A. C. HUDSON exhibited a new Perimeter.

The Bearing on Glaucoma of Deep Tension in the Eye.

Dr. RAYNER D. BATTEN gave a demonstration with two inflated rubber balls or balloons, one of which was covered with muslin, to show the importance of what he termed "deep tension" in the eye as indicating the onset of glaucoma. The deep tension in the eye was represented by the amount of dimpling which ensued with a definite fixed pressure. This deep tension, associated with a fairly deep excavated disc, was likely to merge into glaucoma.—Mr. M. H. WHITING and Mr. GRAY CLEGG (Manchester) discussed the question.

Mr. RANSOM PICKARD (Exeter) read a paper entitled

VARIATIONS IN THE SIZE OF THE PHYSIOLOGICAL CUP AND THEIR RELATION TO GLAUCOMA.

The cases he dealt with for the purposes of his thesis were a consecutive series, the only elimination being all possible cases of glaucoma and other diseases affecting the disc. He anticipated the objection that the subjects came because they had some affection of the eyes and were not simply part of the general population; still, the total numbers dealt with in the later age-groups corresponded very closely with the general population age-groups in Devon. Glaucoma was so rare under 40 years of age that cases might be taken, from this standpoint, as normal. The older the patient the greater the assumption that pathological changes had occurred, glaucoma accounting for a large proportion. Where necessary, the tonometer for pressure and the screen for the field of vision were employed. The disc and cup were carefully drawn in each case and transferred by means of carbon to graph paper. The area of each disc was then measured, and the results reduced to a percentage, 100 being taken as the area of the disc. The cases were grouped in ten-year periods. The myopic cases had large cups, though there were only two groups (16–25 and 26–35 years) in which the largest myopic cup was not exceeded by a hypermetropic cup.

Explanation of the alterations in normal disc cups involved, he said, many difficulties. An alteration in the size of a cavity, situated in a solid like the sclerotic and filled with a viscous fluid, might conceivably occur under three conditions: First, no alteration in pressure. Second, tension from without, as in the contraction or disappearance of nerve fibres or fibrous tissue. In this series cases of this kind were ruled out. Third, there might be pressure from within—i.e., pressure exerted by the vitreous, as in glaucoma. He submitted a twofold suggestion—that the tissues of all discs were not equally strong, and that small increases of pressure acting on the weaker discs over long periods might cause an enlargement of the cups in these cases, but not to the extent of interfering with vision.

Mr. Pickard proceeded to show, by means of the epidiascope, a comparison of the shapes of the glaucomatous and physiological cups. In the former there was certainly pressure from within. The glaucoma cup was usually a simple and symmetrical enlargement of the physiological cup; in a smaller number the conical enlargement was added on to the usual cylindrical form. If most of the glaucomatous cups were enlargements of the physiological cups caused by internal pressure, then presumably smaller degrees of pressure, acting on cups in which the tissues were weak, would cause smaller degrees of enlargement, and without, necessarily, deterioration in vision. Very varying degrees of tension came on in middle life without symptoms arising from it. Pressure was not the only factor, the resistance of the disc must be taken into account. Under the term glaucoma should be included only those cases in which there was sufficient pressure to interfere with the function of the organ; in the cases of high pressure without such interference the pressure must be regarded as a danger-signal. In these latter cases an accurate and thorough investigation should be periodically carried out and all predisposing causes as far as possible eliminated.

The author admitted that the main contention of this contribution, that there was a tendency for the physiological cup to enlarge with increase in age, was not proved but only inferred, but much might be done by a few cases being systematically followed through over a course of years, with accurate diagrams taken at regular intervals.

Discussion.

Mr. THOMPSON said this contribution supported the view that there was a distinct relation between a large physiological cup and a glaucomatous cup. In more than one case he had seen there was undoubted glaucoma in one eye and a large overlapping physiological cup in the other. Also, when ordinary glaucoma had occurred in one eye there was a considerable likelihood of the same condition developing in its fellow. The suggestion of the author that physiological cups were changed into glaucomatous ones owing to unequal resistance of the lamina cribrosa coincided with

his own view. But he did not think that was the mode of causation in most cases. The ordinary glaucoma was that of the text-books, in which it began at the margin of the disc. He did not think the author had sufficiently emphasised the distinction between the ordinary shallow cup, which most discs showed, and the perpendicular cup, which latter often overlapped, so that the vessels came to the edge of the cup and disappeared from view, again being seen in the lamina cribrosa.

Dr. BATTEN thought what was required was some method of recording the cases of central cupping. The actual central cup he looked upon as comparatively innocent; it was when it got to the margin of the disc that it became dangerous. A combination of a large physiological cup and the existence of deep tension justified a fear of the supervention of glaucoma.

Mr. M. S. MAYOU pointed out the great difference between the physiological and the glaucomatous forms of cupping: in the latter there was an actual pushing back of the whole lamina cribrosa. Cupping was dependent not only on the intra-ocular tension, but also on the condition of the nerve fibres as they passed through the lamina cribrosa. He agreed that the danger was when the cupping passed to the margin of the disc.

Mr. N. BISHOP HARMAN continued the discussion, and the opener replied.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

AN ordinary meeting of this society was held on Jan. 21st at 1, Upper Montague-street, W.C., Dr. C. SANDERS (M.O.H., West Ham) being in the chair in the absence of the President.

Dr. G. E. OATES (M.O.H., Bethnal Green) read a paper on

Slum Areas in Central London.

He said that health officers, while approaching housing problems in a scientific spirit, must rely upon public opinion. The average London resident took little interest in the government of his borough. Great credit must be given to the press for the space devoted to housing questions of late, but the building of new houses appealed most to their readers. The slum dweller was not inclined to move to a cottage in the suburbs. Ex-Service men were now not so much concerned to get good surroundings as to get houses at all. The speaker referred to the distinction in size between London County Council schemes under Part I. of the 1890 Act and borough council schemes under Part II. The maximum number of houses for a Part II. scheme was now, he understood, held to be 150. He proceeded to indicate a few special types of slum areas, and mentioned that the only type which could readily be dealt with at the present time was the area containing vacant land which could be built on before any of the slum property was demolished. In regard to compensation, he was of opinion that Section 13 of the 1919 Act would have only a very limited application. Could we expect the Ministry of Health to agree to any compensation greater than laid down by Section 9? It was where the repair and renewal of old buildings went hand in hand with new building that the question of compensation became important. If the owner received nothing but the value of the land without buildings as a housing site or for an open space he would have a clear grievance if the houses were not all demolished. Owners might possibly put forward their present inability to demolish a dwelling house or dispossess their tenants as reasons for not making the houses fit. The economic questions involved in compensation were of great difficulty.

Dr. Oates then referred to the great difficulty of demolishing any area unless there was already accommodation to rehouse the displaced. Temporary accommodation or the conversion of large houses for the purpose was impossible owing to the incredibly high cost. It was undesirable to encroach on the public parks. The people could only be rehoused in high blocks of dwellings, which were undesirable. If slum areas could not be rebuilt at once, local authorities ought to decide and indicate their policy for the future. Owners might be willing to coöperate if they were assured there would be no demolition for a definite number of years. The speaker suggested that the L.C.C. and borough councils should collaborate with the Ministry of Health in a plan for dealing with unhealthy areas as a whole and from a national point of view. Closing orders at the present time were impossible. In most London boroughs little or nothing had been done under Section 28 of the 1919 Act and the Nuisance sections of the Public Health Acts remained the chief instrument for effecting improvements. The penal clauses in the latter were very effective.

Discussion.

Professor H. R. KENWOOD (M.O.H., Bedfordshire and Stoke Newington), in congratulating the reader of the paper, said that two factors which greatly hampered housing work at the present time were the impossibility of dealing with overcrowding, and the difficulty of remedial measures. Properties were deteriorating and also the people within them. The time was ripe for a conference of authorities on the subject. It was easy to exaggerate the importance of environment, and we should aim at helping, and, if possible, compelling people to make the best use of the accommodation provided. There had been in provincial towns a great exodus to the suburbs, but not in the case of the very poorest.

Dr. W. J. HOWARTH (M.O.H., City of London) referred to the results of the deliberations of the Slum Areas Committee, of which he is a member.

Dr. F. J. ALLAN (M.O.H., Westminster) remarked that new views on an old subject were always interesting. The new Housing Act added to the difficulties of M.O.H.'s. There was need of one authority for housing purposes for London and the surrounding country. The demolition of one slum commonly led to the creation of another. He hoped that good results might come from the formation of satellite towns around our big cities, comprising factories, &c., as well as houses, which would lead in the future to the emptying of the slums. Working-class people would not travel more than a limited distance to their work, and the Rent Restriction Act greatly restricted the freedom of those who did desire to move.

Dr. T. SHADICK HIGGINS (M.O.H., St. Pancras) referred to the present impossibility of preventing the overcrowding of houses, and the use as tenements of unwholesome underground rooms. It was a time for long views rather than immediate drastic action. It was most important that existing houses should not be swept away to make room for commercial premises, and for the growth of industry the creation of something like satellite towns was a necessity. He agreed with Dr. Howarth as to the injustice of allowing no compensation for all houses on an insanitary area. There was a gradation even in insanitary property, and there could not logically be drawn a definite line dividing off sanitary houses carrying a full economic value from insanitary houses having no value at all. While he agreed with Professor Kenwood that people of moral worth could make the most of even wretched houses, he was of opinion that the importance to the nation of good houses and other amenities could hardly be exaggerated.

Dr. T. S. MCINTOSH (M.O.H., Hendon U.D.) contended that the idea of effecting much improvement in housing at present was practically hopeless. Improvement schemes would reduce the number of houses available, and would replace cheap houses by dear ones.

The CHAIRMAN, in thanking Dr. Oates for his paper, remarked that a good deal of nonsense was being talked about housing. The danger lay in the overcrowding rather than in the structural condition of the houses. The new houses would become unwholesome if they were sublet so as to become overcrowded. Large slum areas had been formed in this way in the eastern suburbs of London in recent years.

Dr. OATES briefly replied.

Seventeen new members were elected at the meeting.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

A SPECIAL general meeting of this society was held at the West London Hospital on Jan. 14th, at which a discussion on

The Interim Report of the Consultative Committee of the Ministry of Health

took place. Dr. F. J. MCCANN, the President, occupied the chair. Lord Dawson of Penn, who had intended to be present, was unavoidably absent.

Dr. F. G. LLOYD opened the discussion. He pointed out the importance to the whole profession of the subjects dealt with in the Report. He reminded the meeting that Lord Dawson had honoured the society by delivering the Cavendish lecture in 1918 on The Future of the Medical Profession. The present Report was largely the development of the framework contained in that lecture. Owing to increased expenditure many of the voluntary hospitals which previously on account of their endowments had not appealed to the public were now doing so. Their entry into the field had made it much more difficult for those which had hitherto depended entirely on the charitable public. Dr. Lloyd referred to the benefits that "team-work" would give to the public and the help that the general practitioner would receive from it. He urged the profession to concentrate their efforts to procuring by this means all the help that modern research could give. He pointed out that in this respect we were not as up to date as such countries as Switzerland, America, and France. He was strongly in favour of the retention of the voluntary system as opposed to State control. He suggested that the retention of the voluntary system would constitute the best possible "war memorial" to those that had fallen. It would require the united and concentrated effort of the medical profession and public to ensure the salvation of the voluntary system.

Dr. C. W. HUTT (M.O.H., Richmond, Surrey) wished to emphasise the help that bacteriology affords in the diagnosis and treatment of disease, and urged that it should be brought to the door of the practitioner. He thought that Lord Dawson's scheme was an excellent attempt at constructive work, and that by affording the practitioner bacteriological help both the general public and the practitioners would materially benefit by it.

Lieutenant-Colonel E. M. WILSON was opposed to State control of the hospitals, and considered that a great deal might be done to relieve the financial position of the hospitals by instituting some system of voluntary contributions from the patients. This was already at work in some of the hospitals and had proved very satisfactory. He thought that contributions according to the financial position of the patient were better than a "flat-rate" system, and he hoped that if some such scheme was adopted the hospitals might thus avoid the necessity of State aid, which must necessarily involve some amount of control in the management.

Dr. T. ORR (M.O.H., Ealing) said that we had first of all to consider whether the medical treatment provided for the people of this country was sufficient. The examination of recruits during the war showed the great amount of preventable disability that existed, and it was largely on account of this finding that the Ministry of Health was established. The Consultative Committee had the duty of advising the Ministry as to the best methods for preventing the continuance of this serious state of affairs. The Dawson Report was the result. He thought that the scheme proposed would cost an enormous sum of money, and it was our duty to consider whether it should be adopted in whole or part.

Dr. RICKARD LLOYD referred to the question of remuneration for the members of the profession engaged in the Ministry's scheme, and questioned what would be the future field of general practice. If the time of the general practitioner was largely taken up by Ministry of Health work it would be interesting to know what time would be available for private practice.

The PRESIDENT said there appeared to be a general desire to see the voluntary system of hospital administration continued in this country. He thought that State control should be strenuously opposed, as it would not make for the advancement of science. In his opinion "team-work" was essential if the patients were to obtain the maximum benefit from scientific medicine. He thought that the scheme set out by the Ministry of Health would be very costly, and that the tax-payers would refuse to contribute the money. He pleaded for the establishment of maternity hospitals and centres without delay, and pointed out the grave necessity for these in the country. The future of the nation depended on the birth-rate, and money could not be better spent than providing a thoroughly efficient maternity service. This, he thought, should be State-aided.

SOCIÉTÉ DE THÉRAPEUTIQUE DE PARIS.

AT a recent meeting of this society Dr. ARTAULT DE VEVEY read a paper on

Lymphotherapy in Puerperal Fever.

The method consists in injecting the patient's own serum obtained from a blister. He stated that he had employed the method in nearly a thousand cases of infectious disease, especially influenza, as well as in other conditions, probably of an infectious character, such as rheumatism, herpes zoster, chorea, facial neuralgia, appendicitis, and metritis. The method had proved to be most successful in definitely infectious diseases, especially of a febrile character, and had never produced any unfavourable results.

Treatment of Broncho-pneumonia by Formation of a Tracheal Fistula.

In his paper Dr. G. ROSENTHAL stated that this method should be employed early and energetically so as to prevent secondary localisation, as it was ineffective in septicæmia accompanying a pulmonary localisation. On the other hand, as long as the disease remained local it was capable of effecting a cure. Injection of gomenol oil was the usual procedure, to which should be added taurocholate of soda, which had a liquefying action on the pneumococcus. In desperate cases oil of turpentine, in doses of 1–2 c.cm., could be used.

Dr. M. TIFFENEAU and Dr. BOUCHEREAU communicated a paper on the

Combination of Phenols with Hexamethylenetetramine.

The most important preparation according to them was the diphenate, which possessed in a modified form all the properties of its principal constituent, phenol. On the other hand, it had no caustic action and was slightly less toxic, while its antiseptic power was slightly but definitely superior to that of phenol.

Opotherapy in Dementia Præcox.

Dr. A. MARIE (de Villejuif) in his paper reported seven cases of dementia præcox in women and girls, accompanied by disturbance of the ovarian functions, whom he had treated with ovarian extract, combined at a later stage with thyroid extract. In four recovery took place, and had lasted for one, two, three, and five years respectively. In two other cases improvement had taken place, but it was too early to say if recovery would be permanent.

Treatment of Erysipelas in the Newborn.

In this paper Dr. R. LABBE and Mme. M. DE LARMINAT recommended swabbing the affected areas four-hourly, however great their extent, with a 1 in 400 watery solution of silver nitrate. The skin should then be allowed to dry, and be sprinkled with an aseptic powder, such as salicylated talc. The treatment should be continued until recovery, in spite of the brown pigmentation of the skin. No bad effects had been observed.

Dr. L. CLAP read a paper on the

Treatment of Chilblains,

in which he stated that during the war he had several times relieved the pain caused by this affection in soldiers with an elastic bandage applied either directly over the chilblains or just above them. The results were equally good in both cases. Local compression acted more rapidly, but was more painful, while the effects of compression at some distance from the chilblains were more lasting. The former was indicated when there were only a few lesions on the fingers or sides of the feet, while the latter should be reserved for multiple lesions, chilblains on the toes, or ulcerated lesions.

Reviews and Notices of Books.

SURGICAL ASPECTS OF DYSENTERY.

By ZACHARY COPE. London: Frowde, Hodder and Stoughton. With 2 coloured plates and 19 illustrations. Pp. 147. 12*s*. 6*d*.

WITH the termination of the war an increasing number of men who have been exposed to the infection of dysentery are returning to England, so that it is probable that the late stages and complications of this disease will be seen not uncommonly. The majority of English physicians and surgeons have had but little experience of this disease, and will probably find considerable difficulty in its diagnosis and treatment. This monograph will come as a real help to them. It is small, clearly written, easy to read, and yet contains an astonishing amount of information. So helpful is it from the surgical point of view that the only feeling that is left after reading it is one of disappointment that the medical aspects of the disease have not been dealt with in the same or a similar volume; for they also will present difficult problems in the near future. Especially would we have liked to have seen a wider discussion of the relative frequency of amœbæ and the various bacilli as causative factors. The surgeon's need of some medical knowledge of the disease is emphasised in the first chapter, which discusses the frequency with which dysentery occurs as a complication of, or simulates, some surgical lesion. The description of the surgical complications occurring in the early stages of dysentery is very useful, and stress is laid upon the difficulty in distinguishing between true appendicitis and dysenteric typhlitis—a distinction which is of very considerable importance in the question of treatment and progress. It is interesting to note that more active surgical steps are advocated in cases of chronic infection when, as the author points out, the whole colon may be converted into a pus sac. Up to the present these cases have been so rare that the treatment has not been clearly defined, but many of them could doubtless have been saved by more active surgical measures than those usually adopted. Mr. Cope's experience certainly supports this view.

A large section is given over to the consideration of amœbic hepatitis and liver abscess, and the only criticism we would offer on this section is that the division into chapters is artificial and somewhat confusing. Stress is laid upon the importance of early treatment with emetine, but although it is pointed out that the use of this drug may rapidly cure hepatitis, and that it should always be administered after the abscess has been drained, its value as a method of treatment alternative to operation is not discussed. Yet there is a certain amount of evidence that even when a definite abscess has formed it may be cured by emetine alone, and it would have been interesting to read Mr. Cope's view on this point. The relative value of the different forms of treatment is ably dealt with. Mr. Cope does not favour washing out the abscess cavity with quinine, as he has found that emetine by mouth is as efficacious in destroying the amœbæ. The last chapters of the book are devoted to a description of the rarer complications, many of which are rather more medical than surgical. To all those who may have to diagnose and treat these cases—and who, indeed, may not have to do so to-day?—the book will be of great value.

DIE CHIRURGIE DER BRUSTORGANE.

By FERDINAND SAUERBRUCH. Berlin: Julius Springer. 1920. With 637 illustrations. Pp. 931. M.240.

IT is well known that Sauerbruch has been interested in thoracic surgery for many years. Many surgeons will remember his earlier work, published in 1911, which did much to stimulate interest in a field of surgery which at that time was hardly touched. He has now produced a large volume, in association with several others, in which he presents with great detail the anatomy, physiology, pathology of chest complaints, together with the surgical treatment as far as it can be carried out. The book is by no means intended for the use of surgeons only, for its survey includes all methods of treatment, and Sauerbruch expresses the hope that physicians as well as surgeons will read it. That the book is a large one and a monument of industry may be judged from the fact that the bibliography alone runs into 47 large closely-printed pages.

The plan of the book is as follows: A long chapter on the anatomy of the thorax; then is given the physiology of respiration and a chapter on the general pathology of diseases of the thoracic viscera; after this comes what is perhaps the most important part of the book—namely, a long and well-illustrated chapter on diagnosis by means of X rays and clinical methods. Then come shorter chapters on anæsthesia, the use of pressure chambers for obviating pneumothorax, the methods of opening the thorax, and the general technique of thoracic surgery. The second part of the book deals with special forms of injury or disease, each group being dealt with separately; considerable attention is paid to deformities of the chest, and wounds of the lung, abscess, bronchiectasis, and tuberculosis are examples of the subjects considered.

The book is an extraordinarily good one, its merit lying in the breadth of its outlook as well as in its attention to detail. Its outlook includes the history of chest surgery and the fundamental sciences of anatomy, physiology, and pathology, whose handmaid surgery must always be. Some 200 pages (nearly a quarter of the book) are devoted to "diagnosis." It is a truism to insist on the need of a correct diagnosis as a prelude to any form of treatment: in thoracic work the difficulty of obtaining this has been one of the great obstacles to advance. It is only recently that we have been able to make a little progress with the help of X rays, and even now the correct interpretation of the pictures obtained is by no means easy. The diagnosis of abdominal complaints is far more advanced, for the reason that opinions have been checked and corrected by observations made after opening the abdomen; if the hopes and aspirations of thoracic surgeons are realised, and when an exploratory thoracotomy becomes as usual and safe an operation as exploratory laparotomy, then, and not till then, will our diagnosis become more sure. Physicians should be interested in the chapter on the treatment of tuberculosis, and especially to that part referring to the formation of artificial pneumothorax—this is a point which has been, perhaps, too much neglected by English surgeons; it merits their attention. Sauerbruch is a believer in the use of a pressure chamber in all cases in which the chest has to be opened. He holds that the risk of serious interference with the respiratory mechanism is diminished in that the operation can be performed with greater ease and comfort, and that on completion of the operation the lung can be inflated and the chest closed without leaving a pneumothorax. In this country surgeons have not been advocates of the pressure chamber, they believe it unnecessary and rely on gas and oxygen anæsthesia or intratracheal insufflation. At any rate, English surgeons have demonstrated that chests can be opened and operations safely and satisfactorily performed in this manner, and during the war, both in the French and English medical services, hundreds of chests were opened under general anæsthesia without any special form of pressure chamber or insufflator. Not the least interesting part of Sauerbruch's book is the article on gunshot wounds of the chest. He is a conservative surgeon whenever possible, emphasising the importance of rest for all lung wounds. He is insistent, however, on early and free operation for severe bleeding or increasing pneumothorax. It would be interesting to learn what was the practice of the German medical service as a whole on this subject.

This book is the best at present existing on thoracic surgery and the most important contribution to this line of work that has been made for several years.

THE NEW EDUCATION.

A Critical Presentation of the New Education Scheme of the London Education Authority. By L. HADEN GUEST, *M.C.*, M.R.C.S., L.R.C.P. London: Hodder and Stoughton. 1920. Pp. 118. 2*s*.

IN this concise little book Dr. Haden Guest gives an analysis of the main points in the London County Council's new scheme of education from the nursery school to the university, although there is very little in the book about the latter or the training of teachers. The public as a whole will be glad to know that no more school buildings of the heavy three-decker type, costing so much to build and so much to alter, are to be erected. The new schools are to be of the open-air type and of lighter and cheaper construction. School journeys, which do so much to improve the health of the children, taking them to the country or the seaside for a week or more, are to be encouraged, and will become a more outstanding feature in the elementary school curriculum.

Dr. Guest regrets that the Council have not yet seen their way to include spray or shower baths in the plans for the newer schools or to establish them in the older ones. He maintains that the provision of baths would effect an improvement in health, and consequently in attendance, in addition to greatly reducing the vermin infection which still attacks a very large proportion of children. In this way, he asserts, we could dispense with the expensive cleansing stations "which 'keep down' vermin infection but do not prevent it as a training in cleanliness would." Medical inspection is to follow the child into the continuation school, as it does at present into the secondary school and training college, and facilities for treatment are to be available. A special medical examination of children between 12 and 14 employed out of school is to be made. Dr. Guest considers that while provision for the mentally and physically defective child is on the right lines, the Council has not seized the opportunity of dealing with the problem of the industrial and reformatory schools. He states that in spite of the improvements made in these schools in the last few years, the whole provision is at present unsatisfactory and will not really improve until the system as a whole is lifted out of the "criminal" atmosphere into that of the purely medical and educational. Nursery schools are dealt with sympathetically by Miss Margaret McMillan, who deplores the timidity of the Council in this direction.

The book is a critical survey carefully written and deliberately constructive in tone.

THE PRINCIPLES OF PREVENTIVE MEDICINE.

By R. TANNER HEWLETT, M.D., F.R.C.P., D.P.H., and A. T. NANKIVELL, M.D. Lond., D.P.H. Camb. London: J. and A. Churchill. 1921. Pp. 536. 21*s*.

THE general practitioner has always been and must always be the most powerful agent for promoting the health of the community. His advice is constantly being sought not only as to the treatment of disease, but as to the maintenance of health. The present trend of the public health service, which is to develop more and more the personal side of its work through centres for maternity and infant welfare, school clinics, and the like, make it a matter of pressing importance that the busy practitioner should have available information as to these developments and their relation to his daily work. Medical students receive but imperfect instruction on these matters, while those already in practice find difficulty in keeping themselves acquainted with modern advances. A book intended to provide the necessary information has just been published. There can be little doubt that such a book is needed, and fortunately this book is well written, presents no extreme views, and, when the authors are dealing with subjects particularly their own, provides attractive reading. On the other hand, certain subject-matter appears to have been got up for the occasion, such, for instance, as that on industrial hygiene and vital statistics. Neither is dealt with adequately, and both might advantageously have been omitted.

The authors aim at stating clearly great principles and avoid overwhelming their readers with detail. Housing is deservingly dealt with somewhat fully, and the fundamentals for healthy dwellings are admirably given without being obscured with constructional items of interest only to a builder. Vivid word-pictures are used freely and with some advantage. Of the old system by which human excrement is "conserved" in pails and tubs, they say: "The most loathsome and bestial conditions of life exist among these 'conservancy system' houses. ..... These deadly places beggar description, since it is not possible for the pen even to adumbrate the horror of the smell in all its sickly sweetness of putrescence." We should to-day build for future generations. "When we look upon our towns and slums we can only deplore the meanness of the minds that designed them, and let us hope that our descendants will not be able to say this of us." The suggestion that the ideal city should be one of 50,000 inhabitants spread over about 3½ square miles of country recalls the recommendations in Aristotle's republic. The sections dealing with infection and infectious diseases give an admirable summary of present knowledge plainly expressed with the introduction of a minimum of abstruse nomenclature; even immunity is discussed without reference to "complements" and "amboceptors." Similarly a broad and interesting sketch is given of infant and school life, of infantile mortality and juvenile disease; the aim throughout being to lay stress on prevention of those disturbances of health which become the beginnings of disease. We cannot refrain from quoting, in relation to the condemnation of barley-water and pap as nourishment for infants, the remark that "if Nature had intended them to be a baby's diet, she would, no doubt, have provided the mother with barley-water in one breast and rusks at the other," and also "there is death in the pot, and the platter kills more than the sword."

One criticism must be made with reference to death-rates, a criticism which also applies to other writers. The student unaccustomed to statistics should be presented with rates having a common denominator, and the usual one of 1000 population should be strictly adhered to; but while the general death-rate is so given, we find the death-rate from diphtheria stated per 100,000 population, and that from tuberculosis, influenza, cancer, and other causes of death, per million. Confusion is bound to arise from thus altering the denominator, and no advantage is gained by moving the decimal point this way or that. The book is well printed and possesses an adequate index, and we have no hesitation in recommending it to the attention of the profession.

WOCHENBETT-UND SÄUGLINGSPFLEGE.

Von Prof. Dr. EDUARD MARTIN. Berlin: S. Karger. 1920. Pp. 96.

THIS little manual for mothers and midwives was designed to meet the need for a simple text-book dealing primarily with the puerperium and the care of the newborn infant, which, without being overloaded with detail, should yet give all the information necessary for the intelligent treatment of mother and child. The author appears admirably to have succeeded in this attempt, the essential points connected with the normal puerperium being given in the simplest possible language. The teaching is eminently practical throughout, and the 47 woodcuts, though somewhat crude, add value to the book. The question of the feeding of the infant is carefully gone into, and some of the difficulties connected with breast feeding are discussed. Although not much space is devoted to pathological considerations, the author explains clearly the danger-signals of many of the puerperal diseases, pointing out that none of them falls suddenly like a bolt from the sky.

Altogether this small volume, which has an adequate index, should prove of real service to mothers and midwives.

NURSING OF CHRONIC PATIENTS.

By ELEANOR C. BARTON, R.R.C. London: The Scientific Press. 1920. Pp. 126. 1s. 3d.

THERE are few branches of nursing which test the skill, character, and mentality of the trained nurse more exhaustively than does the nursing of chronic cases. Miss Barton in this small handbook gives many valuable hints which should be helpful to young private and district nurses whose past experience has been with hospital patients suffering from acute diseases. Although the book, as a contribution to nursing literature, is slight, it has obviously been written by one with a broad knowledge of the nursing of chronic patients and of the true value such nursing can prove if undertaken with enthusiasm and the determination to alleviate the irksome discomforts so often accompanying protracted illness. The nursing points suggested in cases of hemiplegia and paraplegia are specially valuable and cannot be over-emphasised, and if the nursing of chronic patients is carried out in the spirit of helpfulness which pervades this book such work should prove of considerable interest and its tedium be greatly alleviated.

JOURNALS.

Quarterly Journal of Medicine. Edited by J. ROSE BRADFORD, A. E. GARROD, W. HALE-WHITE, R. HUTCHISON, H. D. ROLLESTON. October, 1920. Vol. XIV. No. 53. Oxford: At the Clarendon Press. Subscription 25s. per annum.—The importance which chemical pathology is playing in present-day medicine is well illustrated by the composition of the current number of the *Quarterly Journal of Medicine*. There are five papers in all and every one is concerned with a question of chemical pathology. The first article by Dr. Reginald Miller and Mr. Herbert Perkins consists of a clinical and analytical study of a case of congenital steatorrhœa. The only case hitherto recorded was reported by Professor Garrod in 1913. The authors are not able to say wherein the error responsible for the fat wastage lies, but there is no evidence in their case of pancreatic disease as adduced by the usual tests. A study of their case appears to confirm Garrod's suggestion of "an inborn error of metabolism probably due to the absence of a normal enzyme, presumably a pancreatic enzyme. It is difficult to believe that there is any real disease of the pancreas."—Dr. George Graham contributes the results of a research into the source of the uric acid excreted after the exhibition of atophan. He concludes that the "extra" uric acid excreted in the urine cannot come solely from the blood, but is probably also derived from uric acid in solution in the tissue fluids of the body. As drugs like atophan, aspirin, sodium salicylate, and sodium benzoate only cause an increased output of uric acid for two or three days, it is useless to give them for this purpose for long periods. If given to gouty people two or three days each week or fortnight it would seem possible to prevent any great accumulation of uric acid in the body, and in this way to ward off attacks of gout.—Dr. Dennison V. Pickering publishes the results of many observations on the blood-sugar in diabetes. From his conclusions it appears that a case with a high blood-sugar content which can be reduced by restricting carbohydrate will probably show greater carbohydrate tolerance, and therefore will do better than a case with a lower blood-sugar content not affected by diet.—Dr. Mackenzie Wallis writes on the "Diagnosis of Diseases of the Pancreas, with Special Reference to Diastase in the Urine." He concludes that an increase of diastase in the urine, together with the presence of glycosuria and a positive result from Loewi's adrenalin mydriasis tests, affords strong evidence of pancreatic disease and that this is still further strengthened if creatorrhœa and steatorrhœa be present.—Dr. E. Wordley discusses the effect of high protein diet on albuminuria and blood urea in cases of chronic nephritis. His results are full of interest. In chronic cases it appears that variations in the amount of protein in the diet have no effect on the amount of protein excreted in the urine. In fact, such increases in the diet do not increase albuminuria; if only percentage figures are taken they may decrease it owing to the diuresis produced by a rich protein diet. It is shown that the blood urea varies very considerably with the diet, and that an estimation of the blood urea is of much less value in appraising the impairment of renal function than Maclean's new urea test. Further, the blood urea may be within normal limit and yet all the manifestations of uræmia be present.

The *Military Surgeon* for December, 1920, opens with a very readable paper by Captain Wesley C. Cox and Major Cyrus B. Wood on the hydrogen-ion concentration of culture media and on buffered solutions whose reaction changes but slowly. There is a chart of the colour reactions of indicators and an account of a simple and convenient colorimeter. The U.S. Army Medical School, anxious that the media used in its associated laboratories shall all have identical reactions, sends out standard phenol-red tubes as controls, and these, if sealed in best quality glass-tubes and kept in the dark, are permanent for some months.—Mr. E. V. Cowdry begs that the nations, for Christian charity's sake, shall seek to arouse in China a zeal for preventive medicine, and details what is being done for medical education in that great empire by China herself, by foreign powers who are supporting medical schools, and especially by the Rockefeller Foundation, which has spent a million and a quarter pounds on the Union Medical College in Pekin. But there are only 600 first-year medical students in all China.—Dr. C. H. Moore and Dr. A. de F. Smith, who were working with the U.S. Army at Coblentz after the armistice, urge that in large centres fractures should be treated by specialists, that in any case they should be treated immediately in spite of swelling, that X ray control is necessary, and that every hospital should have a portable X ray outfit. The splints required are few, combined traction and suspension are the methods of choice, after-care is most important, and their message is that massage, electrical treatment, and occupational therapy must be available in hospital.—Dr. Martin B. Tinker also insists on the value of war surgery in civil practice, advocating wound excision (which he recommended in 1909) in industrial surgery. He stains the wound with iodine and carbolic acid, removes damaged tissue ("nearly always more tissue lives than we expect"), at the same time does any plastic repair that is necessary, transplanting fat to avoid adhesions, and using Carrel tubes and solution to avoid sepsis.—Major F. Kramer tells how the U.S. Army Medical Corps demobilised its patients last year, reducing its hospitals from 55 to 8, its beds from 64,000 to 7000, and its sick from 40,000 to 5000, working from a state of specialism and subdivision to one of general utility and consolidation. Of 18,000 fresh cases diagnosed as tuberculous 4305 were unconfirmed, and of these many were residual pulmonary infections, sequelæ of influenza.—Lieutenant-Colonel Louis C. Duncan relates the history of the preparation of the great "Medical and Surgical History of the War of the Rebellion," 1860-64, which was not completed until 1888, by which date many of its contributors had died. We rarely hear any whole-hearted admiration expressed for service life and methods. That makes the more interesting an article by Captain E. Colby, who appears to be on the teaching staff of the University of Minnesota. In the army he was for a time commanding a company, and for another period on the staff. He learnt the importance of attention to administrative detail and the uses of red tape; he learned that rules are not made to be broken, and he realised that the teacher was responsible for the success or failure of the taught. He was responsible for the pay of his men, and had to keep their accounts accurately. He had to render reports, and these punctually and without mistakes. On the staff he learned the value of reports. He found that rules are made to save time, to facilitate simultaneous coördinated action from a team, and so to increase output. He observed that instruction in drill must be clear, simple, brief, and graduated—every man must be sure of the foundations before going further. An officer is judged by his results. "Awkward" men must not be allowed to remain "awkward," they may disgrace the whole regiment. He concludes: "Like the company commander, the teacher should be judged by his results. This belief I acquired in the army." "Howlers," being a proof of misunderstood teaching, are, he thinks, a disgrace to the teacher rather than to the taught.

Maternity and Child Welfare. Vol. V. No. 1. January, 1921.—This journal is now the official organ of the Central Council for Infant and Child Welfare. In the January number Miss Hilda Cashmore writes on the Community and the New Social Worker. She points out that a serious confusion of thought has given rise to a new label of "social worker," which includes an almoner, a health visitor, and a secretary of the C.O.S., but excludes a doctor or a district nurse. Dr. Leonard Findlay pleads for a pure milk-supply, the notification of venereal disease, and the education of the parents of to-morrow as necessary parts of an intelligent campaign to reduce infant mortality. Suggestions for infant welfare work in Czecho-Slovakia, by Miss M. Payne, are quoted elsewhere in this number, also notes on recent developments in Finland, France, and Serbia. The methods adopted by the Child Health Organisation, U.S.A., in teaching children under 10 years of age are discussed; the staff includes a "health clown," combining entertainment with instruction, a cartoonist, and a "health fairy"—a trained nurse in disguise. The terms of reference of the Executive Committee appointed in March, 1920, and the report recently submitted by this committee to and adopted by the Central Council for Infant and Child Welfare are given in full in this number.

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Vide The Lancet, Vol. I., pp. 89, 684, *1912*; Vol. I., p. 49, *1914*. *B.M.J.*, Vol. I., p. 262, *1912*; Vol. II., p. 906, *1913*; Vol. I., p. 1236, *1914*. *Medical Press*, Vol. I., p. 377, *1914*.

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"In Surgical Infections—Abdominal Surgery."—*Lancet* Vol. II., p. 1713, *1909*.

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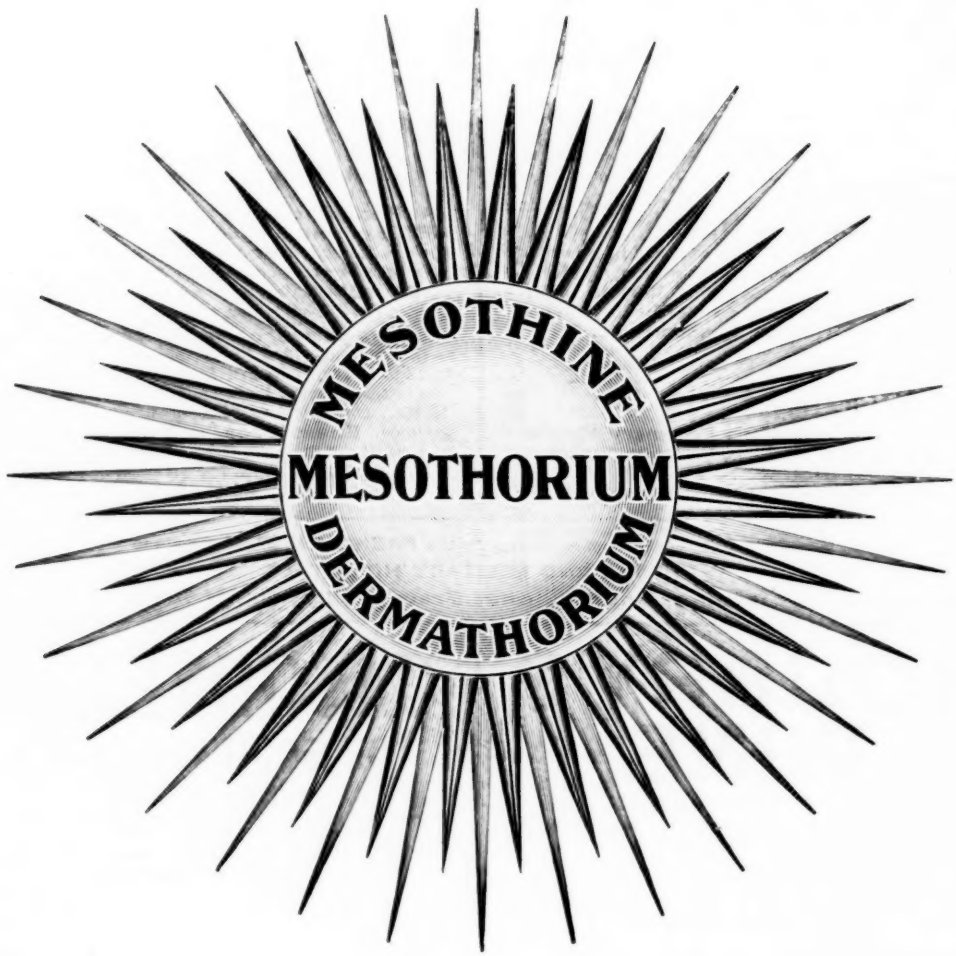

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LONDON: SATURDAY, JANUARY 29, 1921.

Foot-and-Mouth Disease.

Foot-and-mouth disease has assumed considerable importance in this country lately on account of the severe outbreaks that have occurred in Kent, in Gloucestershire, and then in the Midlands, where great inconvenience was caused to business during the Christmas weeks by reason of restrictions imposed by the Ministry of Agriculture, and later in the West Riding of Yorkshire. Thanks, however, to the measures promptly undertaken by the Ministry's officials the disease seems now to have abated, although five more outbreaks occurred the week-end before last, and one was reported this last week in Herefordshire. In the Midlands the outbreak became the gravest that had been known for 30 years, and its wide and rapid spread aroused a very impatient mood among stock-owners. It would appear that the disease, after making its appearance in the West of England, became transported to the Midlands on account of movements of animals to supply the Christmas markets, especially that of Birmingham. In their anxiety to make adequate arrangements for meeting the Christmas trade stock-owners and dealers were not sufficiently careful to observe the condition of health of the cattle in their charge, with the result that animals affected with the disease were mixed with healthy stock, exposed at public markets, and redistributed over wide areas, thus rendering the whole country liable to the risk of infection. Last week an outbreak was reported in Ireland, which had been free since 1914.

Foot-and-mouth disease, as the name implies, is a condition in which lesions are produced about the feet and in the mouths of ruminants—cattle, sheep, and pigs in the respective order of importance. Other animals may also become infected, but the lesions produced are usually not such as to cause serious inconvenience. The lesions take the form of vesicular eruptions within the epidermis, these starting in the form of small congested points, which soon become converted into vesicles by exudation of serous fluid. By confluence vesicles of considerable size may be formed, especially on the tongue, and when these burst, as they quickly do, large patches of epidermis may be denuded. In the mouth the lesions are found on the tongue and buccal mucous membrane, gums, and sometimes in the pharynx. The irritation caused by their presence produces intense salivation, and the saliva discharged by the affected animals is very markedly infective. The lesions about the feet are of the same nature and occur in the skin just above the hoof or behind the claws, and cause great lameness. Sometimes secondary necrotic changes set in, and sloughing of parts of the tissues or even of the whole hoof may take place. Vesicular lesions sometimes appear on the udder and teats of milch cows, and cases of, or even outbreaks of, the disease have been recorded in man through the drinking of milk from cows so affected or through the operation of milking. The period of incubation is usually 2–7 days, but may extend to 11 days. As a rule, the animal recovers fairly quickly; the lesions heal in 5–6 days, so that an animal recovers in two or three weeks. The average mortality in an outbreak does not exceed about 5 per cent. In young animals, however, calves and lambs and young pigs, a rapidly fatal type of the disease is often seen in which the animal succumbs after an acute febrile attack without the development of local lesions. Post-mortem, petechiæ on the heart muscle form the most marked lesion. Sometimes animals may become affected with an intense gastro-enteritis. The local lesions, especially the foot lesions, may sometimes lead secondarily to marked necrosis of the surrounding tissues, which may ultimately involve destruction of the animal. The cause of the disease is an ultra-visible or filtrable virus, found in the serous exudate of the typical lesions and in the saliva. It is also said to be present in the blood during the febrile stage preceding the development of the local lesions. The disease can be set up by means of infinitesimal quantities of the virus, so that this disease is perhaps about the most contagious one known. The virus is not highly resistant towards external influences, and at ordinary temperatures, when exposed to daylight and allowed to dry, it loses its virulence in about 24 hours. On the other hand it has been kept alive for as long as three or four months in sealed tubes in the dark. It is quite sensitive to the action of heat and disinfectants. In countries where the disease is allowed to spread unchecked it remains enzoötic, and after suffering from the disease once the animals usually remain free for a year or two. The immunity, however, set up by one attack is short-lived, and cases are on record where the disease has been known to affect animals a second time within about two months after the first attack. In these backward countries the disease is conveyed by the ordinary means of contagion, principally by contact with affected animals or with food or other materials soiled with the infective discharges. On the Continent restrictions are placed in most countries upon the movement of stock out of or into the infected premises, but on account of the high contagiousness such precautions are only partially successful. In this country, thanks to the measures carried out by the Ministry of Agriculture, which has powers to make orders to deal with the disease under the Diseases of Animals Acts, and thanks also to the prohibition of importation of animals except for slaughter at the port of entry, we have been comparatively free for about 35 years, only local outbreaks having been recorded. Prior to the adoption of these measures extensive epizoötics used to occur from time to time, such as in 1869–1872 and 1881–1884, when hundreds of thousands of animals were attacked; in the year 1883–1884 there were 18,732 separate outbreaks in Great Britain, spread over 75 counties, and affecting nearly half a million animals. The disease first made its appearance in this country in 1836, although the flocks of Europe had previously suffered. Since the time when the late Sir GEORGE BROWN and the Veterinary Department of the Privy Council rid the country of the disease in 1885, the 95 outbreaks in 1892 are the only ones comparable to those that have occurred in the past two years.

The success of the policy adopted by the authorities depends upon prompt reporting of suspected

cases; the police are informed and communication is established at once with the veterinary staff of the Ministry, and an official is immediately despatched to the spot to investigate the condition. If the outbreak should turn out to be one of foot-and-mouth disease all affected animals are slaughtered immediately and buried or burnt, and all in-contacts or suspected in-contacts are likewise slaughtered. An area with a radius of about 15 miles from the affected centre is then declared, and movements of animals are prohibited strictly into or out of this area, and even within the area, except for immediate slaughter. This policy at first sight appears drastic and costly, especially in view of the fact that the disease is seldom fatal. However, this policy resolutely carried out by the Ministry, with the active coöperation of stock owners and other interested parties, should have as its effect the obliteration of an initial outbreak and the prevention of the establishment of secondary centres. The loss entailed by wasting in condition of animals during an attack, and by the total cessation of the milk-yield in milch cows would undeniably exceed to a tremendous extent the monetary losses now involved in carrying out the policy and in giving compensation to owners. In countries where this disease is enzoötic, treatment of the lesions is adopted and various remedies have been boomed as specifics. At the most these can only be regarded as palliatives, and upon careful investigation they have been all found to have no specific action. A serum can be produced, which has some value as a preventive, by hyper-immunising cattle with material from the lesions or with blood of affected animals during the febrile stage. In France and in Argentina the serum has been shown to have some economic value, but it is costly to produce and the immunity is a short-lived one; and in any case it does not meet the need for stamping out the disease.

Now comes a most important question. How can we explain the periodic appearance of the disease in this country? The reason for most of the recent outbreaks can be seen; they are secondary outbreaks due to the movement of infected cattle. But we are at a loss to account for the epidemics which occur from time to time when the country has been free from the disease for some considerable time or when they happen at distances far apart or in circumstances which seem to exclude all chances of mediate contagion. We know that such initial outbreaks do occur on farms where there has been no movement of animals into or out of them for some time. In making a survey of the position as regards this country during the 20 years prior to Sept. 20th, 1920, the Chief Veterinary Officer of the Ministry of Agriculture, Sir STEWART STOCKMAN, computed that there had been no fewer than 63 such initial outbreaks. Examination of the facts revealed that none of the mediate means of contagion such as would account for the importation of other infectious diseases—for example, anthrax—could be held responsible for the sudden appearance of the disease. Anthrax is known to be imported in most cases with infected material. But the importation of feeding stuffs, manures, or packing stuffs from the Continent could not be responsible for the foot-and-mouth epidemics, neither could the movements of human beings to and from the Continent. Two theories remain—viz., that the disease is air-borne, either by the winds or by birds. We know that the disease is carried considerable distances in the direction of a strong prevailing wind, and that these initial outbreaks occur when the disease is propagating to a serious extent in neighbouring parts of the Continent. If the incidence of this disease is examined by counties or groups of counties we see that certain groups are particularly liable to be "hit," while others remain free. It is suggested as possible that there may be some atmospheric condition in the nature of air pockets which prevails over the areas predisposed to attack. The bird theory is not favourably countenanced inasmuch as the incidence of attack does not correspond with the migratory periods of birds. Recently a Departmental Committee was formed to suggest measures for investigating the causes which give rise to outbreaks of the disease, and we understand that upon the recommendations of this Committee experiments are now being carried out in mid-ocean upon ironclads under the supervision of the renowned bacteriologist NOGUCHI. We are awaiting with great interest the results of his investigations.

The Census.

UPON the eve of a Census we must expect the time-honoured jests regarding statements of age by maiden aunts and the difficulties of an uneducated householder faced by the lengthy schedule. These weary witticisms are again in the newspapers, but phrased more bitterly than ten years ago; one journal has already hinted a doubt whether the employment of hundreds of clerks and the expenditure of hundreds of thousands of pounds upon a Census is worth while. "Where are thy Batches?" howled the people. "Hungry *canaille*," asked FOUQUIER, "is thy bread cheaper, wanting them?" One gathers that the official statistician, the "bureaucrat," or "squandermaniac," is hardly more popular than was FOUQUIER, and it may be worth considering whether he could provide a better answer to a similar question regarding batches of abstract, or arithmetical, heads. Perhaps the best answer is to recall events of 100 years ago, of a period of transition bearing some resemblance to that of to-day.

Following the last great European war there was a social and economic upheaval. Then, as now, there were heavy taxation, much distress, and the future was uncertain. At that period came the first collective attempt to appraise the results of the industrial revolution which had changed England from an agricultural to a manufacturing country. The relation between industrial employment, the housing and the feeding of the labouring population, and the national health were prominently discussed. Did work in factories injure the health of the employees? What was the relation between insanitary surroundings and longevity? Were towns more unhealthy than the country, if so, how much more unhealthy? All these questions then, as now, were eagerly canvassed, and the evidence submitted to Royal Commissions and Parliamentary Committees between 1820 and 1840 covers thousands of pages. What impresses the modern reader most is the logical inadequacy of the evidence. Hundreds of statistical tables were printed comparing, for instance, the mean ages at death in different localities and different occupations; from such tables sweeping conclusions were drawn. Dr. FARR'S witty comment that "if the inquiries had been extended to boarding schools or to the boys

at Christ's Hospital the mean age at death would have been found still lower" seems to modern readers to indicate an extremely low average level of statistical logic amongst his contemporaries. But, in fact, the users of these fallacious arguments were not fools; they used bad statistics because they could get no better statistics. At the Census of 1831 the age-distribution of the population was not obtained, and it was not until after 1841 that deaths at ages could be properly related to local populations at risk in different areas. It is not too much to say that the defective statistical machinery, the absence of batches of figures, was directly responsible for much preventable death and still more preventable misery throughout a whole generation. "What is most evident," wrote an acute observer of social institutions, "is not the difficulty of getting a fixed law, but of getting out of a fixed law; not of cementing (as upon a former occasion I phrased it) a cake of custom, but of breaking that cake of custom; not of making the first preservative habit, but of breaking through it, and reaching something better." The history of preventive medicine is a good comment upon that text. The bad statistics of the earliest apostles of sanitary and industrial reform injured their cause; the cake of customary indifference was not so easily broken. The good statistics of FARR and GREENHOW were the most powerful weapons in the hands of SIMON. When, full of years and honours, SIMON wrote his history of English sanitary institutions, the Nestor of preventive medical science did not forget what he owed to the labours of the statistician. FARR he happily characterised as "the man to bring into statistical relief, and to make intelligible and instructive to the common mind, whatever broad lessons were latent in the life-and-death ledgers of that great counting house." It was the General Register Office which "was rendering immense service to sanitary science by enabling it to use exact numerical standards in place of the former vague adjectives." The reforms needed in the "hungry forties" were great, the industrial transition of the early nineteenth century was painful. Had official vital statistics come into their own a generation sooner that history would have been different. Ignorance in a community, as in an individual, is far more cruel than malevolence. But the perils of our own time are still greater. One of these perils is the failure to realise the importance of a physical stock-taking, of learning the best and the worst about our nation. The machinery of a Census furnishes one item of this great account, an item which is essential to the interpretation of all others.

In combination with the returns of births, deaths, and marriages, the Census enumeration suffices for a reasonably complete evaluation of birth-, marriage-, and death-rates in all administrative areas and the chief occupational groups. Some difficulty has arisen in certain areas owing to the fact that the de jure population of a district may differ from the de facto population enumerated on Census day. This, it is believed, will be overcome on the present occasion. Again, satisfactory presentation of occupational mortality is very difficult to secure, and probably some of the difficulties are insuperable. But the arrangements made for this year's Census are the result of very careful consideration, and profit has been drawn from past and foreign experience; we have no doubt that the final analysis of industrial mortality will be even more illuminating than its famous predecessors. The Census machinery and the Registrar-General's returns cannot, however, provide two other items of the physical balance-sheet which are needed to complete the account. One is an appraisement of average physical fitness, the other a knowledge of morbidity-rates. The former is a subject to which the State has paid little heed save in times of war. It could only be dealt with by sampling, a method which is, statistically, quite satisfactory, provided the sample examined be a really random sample of the occupational or other class it is desired to study, and the limits of accuracy required have determined the size of samples. The method of physical examination appropriate to the case is still a matter of opinion; it must be simple yet accurate. Professor G. DREYER[1] has brought forward evidence to show that determination of the "vital capacity," advocated nearly 80 years ago by JOHN HUTCHINSON,[2] combined with two easily made measurements and the weight, suffice to characterise physical development. Professor DREYER'S plan is worthy of an extended trial. The incidence of sickness, not necessarily fatal sickness, is also a matter which can be more conveniently dealt with by the method of sampling than by any attempt at exhaustive enumeration. The possibility of such sampling furnished by the new system of medical records is one of the merits of a plan which has been the object of so much invective. Clearly of all these undertakings the Census enumeration is the most important. Given a Census, from data provided by the death returns alone, we can learn much; without a Census we can learn little indeed from mortality or morbidity records. There are very few duties of a citizen in time of peace which can be of more importance than doing as much as in him lies to make the enumeration complete and accurate.

Alimentary Delay.

CURRENT usage has agreed upon time standards in regard to certain functions of the body. It is usual to retire to sleep at a particular hour and rise seven or eight hours later, to take our meals at intervals of five or six hours during the day, and to solicit an action of the bowels once or twice within 24 hours. Unfortunately, we have little to remind us of the time relation between the two latter events; generally speaking, the more quickly the food residues traverse the alimentary canal the more fluid and less formed are the excretions. But there may be a high degree of delay without our attention being called to it; residues arrive at the winning-post without word as to when they made the start. And at first no inconvenience may arise. As Sir W. ARBUTHNOT LANE reiterates in his Hunterian lecture, stasis which makes itself felt in adult life may have commenced early in the history of the individual; he suggests that it may even date from the epoch at which the napkin was discarded and the infant became habituated to a single daily action. As the skilled monthly nurse may achieve voluntary control for her charge before she leaves, this puts back the initiation of the sluggish habit to a very early date. LANE draws a picture of the later effects of this stasis so terrible that if even a tithe of it were realised we should adopt means of prevention rather than await the need for treatment. Dr. H. A. DES VŒUX,

[1] THE LANCET, vol. ii., 1919, p. 227.
[2] THE LANCET, vol. i., 1846, p. 630.

in our correspondence columns this week, reminds us with what mischievous carefulness all the laxative properties of a natural diet are kept away from the well-to-do child. Potato parings, apple peel, and cabbage stalk are eliminated and enough milk often given to supply in itself all nutritive requirements, leaving little or no stimulus to peristalsis. Close rooms and confined limbs often enough still further limit the healthy metabolism. And soon a slippery insoluble liquid has to be added to the diet from which the natural residue has been removed. Last and worst, recourse is had to castor oil, that toothsome dainty which was so providentially diverted to munitions a while ago. The diet of slugs and snails and puppy dogs' tails, suggested by the nursery rhymester for little boys, was harshly expressed, but physiologically it was righteous compared with the complementary diet of sugar and spice and all that's nice, and far less calculated to give rise to stasis. The correct principles of alimentary training in young children are simple enough, and are only difficult because they encounter ignorance and prejudice.

FEES FOR PUBLIC VACCINATION.

THE Association of Public Vaccinators of England and Wales has approached by circular members of boards of guardians throughout England and Wales in the matter of the fees payable for public vaccination, pointing out that the minimum fees for domiciliary vaccination are at present precisely the same as they were from 1899 to 1907. The Association appeals to the guardians for an increase in the remuneration of the public vaccinator, both in view of the general increase in cost of living and diminished value of money, and more particularly because of the largely increased expense in every department of medical practice, particularly in the important matters of travelling and dressings. The Association states that from 1907 to 1919 there was a reduction in the minimum fees; this change was made in face of the strongest protest and, it considers, left a deep sense of injustice on the mind of the public vaccinator. Certainly it was at variance with the recommendation of the Departmental Committee appointed by the Local Government Board, which, after a most exhaustive and searching inquiry, expressed the opinion that there should be no change in the minimum unless and until the public vaccinator should be given the status of an officer of the guardians, eligible for superannuation and with fixity of tenure. This recommendation was not adopted. The public vaccinators feel that the Ministry of Health, in the Order of last year, while removing a grievance for which the Association had been attempting to obtain redress for many years before the war, left to the boards of guardians themselves the opportunity of making such increases upon the minimum as would be justified by reasonable consideration of the altered circumstances created by the war. The Association is confident that boards of guardians only need this matter to be brought before them to recognise the necessity for such an increase of the existing fees, either by revision of contract or by percentage bonus additions to fees, as may meet the increasing difficulties of the public vaccinator, and assimilate his position to that of other branches of the public service. We need hardly say that the views of the Association will be endorsed by the medical profession. Should a recent testimonial be required to the work of the public vaccinator, it is given by the Chicago Department of Health, always to the fore in sanitary instruction, which prints in its last bulletin a "vaccination creed" based upon many years of practical experience in public vaccination. From 1899 to 1920 inclusive 3565 cases of small-pox occurred in Chicago with 167 deaths. Of the 448 vaccinated persons who took small-pox none died. No revaccinated person took small-pox.

Annotations.

"Ne quid nimis."

VITAL STATISTICS FOR 1920.

WE have received from the Registrar-General the following provisional figures for the birth-rate, death-rate, and infant mortality in England and Wales during the year 1920:—

—	Birth-rate per 1000 total population.	Death-rate per 1000 population.	Deaths under 1 year per 1000 births.
England and Wales	25·4	12·4	80
96 great towns, including London	26·2	12·5	85
148 smaller towns	24·9	11·3	80
London	26·3	12·4	75

In the great towns are included all those with a population exceeding 50,000 at the Census of 1911; the smaller towns are those with 20,000 to 50,000 inhabitants. The death-rate for England and Wales relates to the whole population, but that for London and the groups of towns to the civilian population only.

Although the rates here shown are provisional, no subsequent adjustment will affect the following important conclusions—namely: (1) that the birth-rate for 1920 is the highest of the decade; (2) that the death-rate is the lowest ever recorded; (3) that the infant mortality is the lowest ever recorded; (4) that the number of births is the highest ever recorded; (5) that the number of deaths is the lowest recorded since 1862, when the population was only 20 millions.

A NEW SPIROCHÆTAL DISEASE IN JAPAN.

SOME of the same Japanese investigators who, early in 1915, discovered the virus of spirochætal jaundice (Weil's disease, Spirochætosis ictero-hæmorrhagica), now give [1] the successful results of an inquiry into the ætiology of a somewhat similar disease, prevalent in various country districts of Japan, but not found in the towns. This disease is known in the province of Fukuoka, where the work was carried out, as nanukayami (seven-day fever). It has, however, been fully identified as occurring in at least eight other provinces under a variety of local names. The disease is confined absolutely to country districts, which made its laboratory investigation extremely difficult. Clinically, it is described as a fever setting in suddenly, with great depression, pains in the muscles, injection of the conjunctivæ, intestinal disturbances, and swelling of lymphatic glands. In the early stage there is albuminuria, and leucocytosis is also a feature. The course is comparatively short—round about seven days—and the mortality is fortunately nil. Neither jaundice nor hæmorrhages from mucous membranes are met with. It is interesting to note that as far back as 1889, in Japan, atypical cases of Weil's disease were recognised during epidemic periods, in which jaundice did not occur. This observation was fully confirmed on the Western Front during the war. For a long time nanukayami was believed to be simply atypical Weil's disease, without jaundice, and it was only in 1910 that Inada, after a careful epidemiological and clinical study, suggested strongly that seven-day fever was a separate clinical entity. The brilliant results of the investigation of Weil's disease, resulting in the discovery of the causal spirochæte, suggested at once a similar line of experiment in connexion with nanukayami. The

[1] Ido, Y., Ito, H., Wani, H., Okuda, K., and Hoki, R.: Mitteilung ueber die Aetiologie, Epidemiologie, und Pathologie der "Nanukayami" (Siebentagefieber). Ido, Y., Ito, H., and Wani, H.: Die zweite Mitteilung ueber die Aetiologie der Nanukayami (Siebentagefieber). (Mitteilungen aus der Mediz. Facultät der kaiserlich. Universität Kyushu, Fukuoka, Japan, Band. v., Heft. ii., 1920, ss. 81-130.)

cause of this fever has now also been found to be a spirochæte, to which the name *Spirochæta hebdomadis* has been given. The writers state that it is identical morphologically with the *Spirochæta ictero-hæmorrhagiæ*, but is clearly differentiated from it by immunity reactions. The experiments bearing on this latter point are given in complete detail, and appear quite sound. The *Spirochæta hebdomadis* is found by inoculating guinea-pigs intraperitoneally with blood from cases of the acute disease. It brings about death in 60 per cent. of the animals, while the remainder gradually recover from the infection. An unbiassed reader of the work cannot help being struck with the exact similarity of the temperature charts of guinea-pigs fatally infected with nanukayami, and those inoculated with blood from a case of Weil's disease. There is high fever lasting for four to five days, followed by sudden collapse before death. Moreover, the authors state that, in 17 per cent. of the animals infected with nanukayami, jaundice occurs. Spirochætes are found abundantly in the liver of the infected animal. Thus, apart from the serological distinctions, the *Spirochæta hebdomadis* and *Spirochæta ictero-hæmorrhagiæ* would appear from their main effects to be very closely allied species.

The main point of interest really centres round the carriers of the two spirochætes. The brown rat, *Mus decumanus*, has been clearly proved to be the chief carrier of *Sp. ictero-hæmorrhagiæ*, and spirochætal jaundice is a disease found in towns and in places where men are congregated together. On the other hand, nanukayami is a disease of country districts only, and its carrier has been clearly identified by the present investigators as the Japanese field-mouse (*Microtus montebelli*). The urine of this animal, just as in the case of the rat, appears to be the main source of infection. It seems possible that the two spirochætes of nanukayami and Weil's disease are really the same, modified by their development in the different animals which act as their intermediate host. It is quite obvious that, at any rate, they are closely related to one another.

The Japanese writers are to be congratulated both on discovering the cause of a fever of hitherto unknown origin, and on pointing out the field-mouse as a carrier of disease. Their work suggests that many of the short fevers, prevalent locally in different parts of the tropics, might well be elucidated on similar lines. Although the Japanese authors, who write in the German language, refer to the disease under the name Siebentagefieber (seven-day fever), the condition must, of course, not be confused with the fever known to us as trench fever, and in German literature often named Fünftagefieber (five-day fever).

HEALTH REFORM IN IRELAND.

A Dublin correspondent writes:—The Chief Secretary has notified the Irish Public Health Council that it is not the intention of the Government to undertake legislation along the lines of the Council's report, because of the expense that would be involved. At his interview with the Council in September, Sir Hamar Greenwood had declared that on the ground of expenditure nothing would stand in the way of the Government undertaking legislation, but that the moment was inopportune from a political point of view. Those interested in medical reform will make their interpretation of the Chief Secretary's statements. The net result of health legislation in the United Kingdom of Great Britain and Ireland in the past two years is that England and Scotland are each provided with a full working Ministry of Health, while Ireland—where health reform is even more pressing—is left with an Advisory Council whose advice is treated with contempt by the Government. The late Chief Secretary, Mr. MacPherson, had pledged himself to legislate on lines the Council would propose, and at his request, and in reliance on this pledge, the Council drafted a thorough-going and careful scheme of reform. But Mr. MacPherson did not stay long enough in Ireland to redeem his pledge, and apparently it bound no one else.

THE UNCINARIASIS COMMISSION OF THE ORIENT.

AMONG the many large and praiseworthy activities of the Rockefeller Foundation International Health Board is its world-wide campaign against hookworm infection. In 1914 the General Director of the International Board visited a number of countries in the Near and Far East, including Egypt, Ceylon, the Philippine Islands, and the Federated Malay States, making preliminary surveys and collecting information to facilitate the studies of the experts who might eventually make detailed investigations in these countries. In 1915 a Commission was appointed the expenses of which were defrayed by the Rockefeller Foundation; it comprised three members, Drs. S. T. Darling, M. A. Barber, and H. P. Hacker, all of whose names are already well known to students of tropical medicine in connexion with scientific work in the Panama Canal Zone and elsewhere. The Commission became known later as "The Uncinariasis Commission of the Orient," and its labours were mostly carried out in the Federated Malay States, Java, and the Fiji Islands. The terms of reference were "to determine to what degree uncinaria infection is a menace to the health and working efficiency of the people of a country," and plenty of evidence was found that ankylostomiasis caused much ill-health and that it led to considerable inability to work. The intimate relation that was discovered to exist between malaria and hookworm disease as disabling factors rendered it necessary that the Commission should devote almost as much time to the local study of malaria as to hookworm disease, in order to determine the relative importance of the two infections as causes of anæmia.

In the abridged edition of the Commission's report[1] now published it is stated that on the whole in Malaya, where malaria and ankylostomiasis are common, severe anæmia due to the latter is less frequent than severe anæmia due to the former. As regards the relation between the species of worm and the degree of anæmia, the Commission observed that in cases of infection the same number of worms caused a greater degree of anæmia among Chinese subjects than among Tamils. As the Chinese harbour much larger numbers of *Ankylostoma duodenale* than do the native Indians, the fact was taken to indicate that the latter species of worm is probably a more powerful agent in the causation of anæmia than *Necator americanus*. Considerable attention was given by the Commission to the investigation of the value of various drugs in the treatment of hookworm disease. Native patients, however, were found sometimes to be difficult of control, and valuable observations were rendered useless by the patients absconding during the period in which the effects of remedies were being watched. Some of the experiments, however, were made in jails and hospitals where better control was possible. Various vermifuges were tried and attempts were made to reach a scientific conclusion as to the relative merits and efficacy of differently graduated doses of chenopodium and thymol for the routine treatment of uncinariasis. Ultimately it was proved that chenopodium in small doses was more efficacious than similar doses of thymol; chenopodium also showed a satisfactory efficacy in a greater range of doses. While, dose for dose, both drugs exhibited about equal efficacy in removing *Necator americanus*, chenopodium was superior to thymol in removing ankylostomes, the more resistant species of hookworm. It appears also that chenopodium is more effective in removing other parasitic worms such as ascaris and trichuris. The valuable work done by the International Health Board of the Rockefeller Foundation, in its campaign against hookworm disease, deserves the warmest recognition of all who are interested in the economic development of those countries in Asia and elsewhere that have been kept back by this disabling disease.

[1] Report of the Uncinariasis Commission of the Orient, 1915-1917. The Rockefeller Foundation International Health Board, New York City. 1920. Pp. 191, with numerous illustrations (not on sale).

THE GROWTH AND SHEDDING OF THE ANTLER.

A DISTINGUISHED surgeon has followed up his work on growth of bone by a study of the growth and shedding of the antler,[1] of the histological phenomena observed during these processes and their relation to the growth of bone. On the authority of Sir William Flower the statement is made that in the larger species (such as the Irish elk) the weight of the antlers is more than that of all the bones of the skeleton put together. This is not the most remarkable fact about the deciduous antlers of the deer. Not only does enormous growth, "according to plan," of these weighty defensive organs occur within three or four months, but the skin or velvet which covers these often palmate outgrowths, grows pari passu with the bone itself, so that there is complete reproduction of the whole of the cutaneous tissues, epithelium, cutis, gland and hairs, blood-vessels, lymphatics, and nerves with each renewal of the antlers. Obviously to do this the vessels of the velvet must grow with great rapidity to supply the abundant pabulum necessary for the skin growth, for these vessels have but few connexions with the special set of blood-vessels which supply the rapidly growing bone. The nerves to protect the sensitive growing antlers are outgrowths from the trigeminal nerve. The bony part of the antler is derived from a pedicle projecting from the frontal bone. The rapidity of growth is so great that all phases of bone development by osteoblasts can be found occurring simultaneously in one part or other of a half-grown antler, and the phenomena are, in the main, analogous to those of the growth of bone in other parts of the mammalian skeleton. Even from its earliest growth arrangements are made for the rapid shedding of the antler after it has performed its evanescent purpose. Osteoblasts form ossein which ultimately constricts the internal blood-vessels supplying the growing bone, leading to ischæmic necrosis, and the antler is ultimately shed from the action of the living tissue on the proximal side in the pedicle. Similar arrangements are also made for the shedding of the velvet. At first the larger cutaneous blood-vessels lie in grooves in the antler, but ultimately the excessive growth of bone forming the corona encroaches on them and subsequently obliterates them. The osteoblasts are evolved from pre-existing bone cells or osteoblasts in the pedicle, and Sir William Macewen thinks that the mass production of bone depends not only on normal cell division of the osteoblasts, but is aided by nuclear budding which he has studied and figured. A new and larger antler grows yearly from a single small centre of ossification in the frontal bone, forming a pedicle identical in structure with frontal bone and covered at the beginning of the growing period with cartilage which ossifies from the base upwards. The cartilage grows in advance until the full size of the antler is reached, when its ossification becomes complete. The pedicle once formed is a permanent structure, growing in circumference during subsequent years. The antler first appears during the second year of the animal's life, when it presents only a single stem. Injury or disease of the pedicle or skull makes corresponding modifications in the growth of the antler. The separation of the antler is primarily due to the withdrawal of its blood-supply, both of the bone and velvet. Obliteration of the superficial vessels in the cutis-velvet takes place at the corona, the edge of the corona presses on and through the cutis, and, as there is no collateral supply from the bone vessels, the whole velvet covering becomes avascular, dries, shrivels, and peels off in shreds, although the growth in the interior of the antler is still active. The separation of the antler from the pedicle is effected also at the level of the corona, the bone gradually becoming avascular, very dense, with complete obliteration of the relatively thin-walled vessels. At the line of separation or shedding the pedicle becomes very vascular and a "granulation tissue" forms and gradually loosens the organic connexions between the pedicle and the dead antler, while at the same time the deeper bone cells of the skull and pedicle proliferate, assume the rôle of osteoblasts, and are ready for fresh effort in producing a new antler. The whole process of shedding of the antler takes place in the open air and aseptically. No mention is made of osteoclasts as agents in the process. Sir William Macewen refers only briefly to the effects of castration on antler growth, and suggests further inquiry in this direction. Nature's methods of self-amputation, be it by way of autotomy, shedding of an antler, or fall of a leaf, are scientifically perfect and are prototypes of aseptic surgery in its most complete and successful application.

[1] The Growth and Shedding of the Antler of the Deer, by William Macewen, F.R.S. Glasgow: Maclehose, Jackson, and Co. 1920. Pp. 109. 10s. 6d.

THE INSTITUTE OF PHYSICS.

THE first move towards a closer relation between workers in physical science dates from March, 1918, when, under the presidency of Professor C. H. Lees, representatives of four societies met to define the lines of future coöperation. These were the Faraday Society, the Optical Society, the Physical Society of London, and the Rontgen Society. Their decision to form an Institute of Physics analogous to the existing Institute of Chemistry took effect, and the Institute was duly incorporated last November. The Royal Microscopical Society has now joined the Institute, and it is anticipated that other societies will follow. A circular has been issued reciting the objects of the Institute and the regulations proposed for the admission of Members, Students, Associates, and Fellows. The two latter groups will use the title A.Inst.P. and F.Inst.P. respectively. The regulations for admission and for professional conduct are based upon those ruling in the sister Institute, and they will doubtless aid in raising the status of the physicist in the public mind alongside of the chemist. All branches of physics are in reality closely inter-related, and nothing but good can come of the amalgamation.

TUBERCULOSIS OF THE LIP[1]

Dr. Erwin P. Zeisler,[1] dermatologist to the Cook County Hospital, Chicago, records an example of this rare condition in a man, aged 56, who sought advice for a painful swelling of the lower lip, which had appeared ten months previously. The entire lower lip was uniformly enlarged and indurated with several small areas of denuded epidermis. The inner aspect of the lower lip down to the gingival border showed a superficially ulcerated area, about 2 cm. broad, surrounded by œdematous mucous membrane. On palpation the ulcer felt moderately indurated. An ulcer was also found on the inner aspect of the upper lip and a third ulcer opposite the last lower right molar. In view of the patient's age, the induration, and the presence of a hard mass of glands in the submental region, most of the members of the Chicago Dermatological Society, where he was exhibited, expressed the opinion that the lesion on the lower lip was an epithelioma. The presence of the other ulcers, however, was not consistent with this view, and the diagnosis of tuberculosis of the lip was established by finding large numbers of acid-fast bacilli, morphologically identical with tubercle bacilli, in smears and scrapings from the mouth, as well as by the results of a biopsy which showed isolated and conglomerate tubercles with characteristic arrangement of giant cells, epithelioid cells, and small round cells. A few tubercle bacilli were found in the corium. Examination of the chest showed chronic pulmonary tuberculosis of the fibroid type. A general tuberculosis regimen was instituted, cocaine was applied to the lip to relieve the pain, the ulcers in the mouth were swabbed daily with diluted hydrogen peroxide, and filtered Coolidge treatment was administered over the lip and submental region, with the result that considerable improvement took place before the patient disappeared from observation.

[1] Archives of Dermatology and Syphilology, January, 1921.

THE CENTRAL MIDWIVES BOARD.

FROM the recent report on the work of the Board for the year ended March 31st, 1920, we learn that on that date the Midwives Roll contained the names of 45,960 women, a net increase for the year of 1794. Of these, the trained midwives number 37,056 and the untrained 8904, the proportions being 80·6 and 19·4 per cent. But, as we have frequently pointed out, the percentage of trained midwives who practise as such is relatively small, amounting only to 21·5 of the trained women on the Roll. Of the untrained, approximately 40·7 per cent. are in practice, though frequently to a small extent only. The actual total number of practising midwives has been ascertained to be about 11,500. There are 159 institutions and homes in England and Wales at which midwives may be trained, of which 63 are Poor-law institutions. 104 registered medical practitioners are approved by the Board as lecturers, and 49 practising midwives as teachers, responsible for the practical training. Private training accounts for the entry on the Roll of 1107 midwives practising in 1919, or 9·6 per cent. of all practising midwives. Of 2344 candidates who completed their examination 1904 passed, the percentage of failure being 18·8 and varying widely over the country. Manchester's failures amounted to 34 per cent., Leeds's but to 13 per cent. Of the 1904 successful candidates 1238, or 65 per cent., declared their intention of practising as midwives, and of this number 642, or 51·9 per cent. intended to practise in rural districts, where at the present time the shortage is most keenly felt. During the year 54 midwives were dealt with by the Board under its penal powers. They had to answer charges of malpractice, negligence, or misconduct, resulting in the immediate removal from the Roll of 35 names. Two other women were censured and two cautioned, while in four cases no action was taken. 105 women surrendered their certificates on the ground of old age, ill-health, or inability to comply with the rules. During the year the Board discussed the possibility of limiting the number of cases to be taken by midwives. A local supervising authority had represented that in many cases omissions and failures on the part of midwives to observe the rules were attributable to the fact that they had undertaken more confinement cases than could be coped with. The Board decided that it was impossible to rule that a midwife should not take more than a certain number of cases in the course of a year, as the number of cases which could be taken without affecting the proper conduct thereof depended on factors of a varying nature, such as concentration and dispersal of cases, the normality or otherwise of the cases, the powers of endurance of the midwife, and the like. Compliance with the rules as they stand should prevent scamping of work.

RECENT WORK IN HOLLAND ON REFLEXES.

THE efforts of the Anglo-Batavian Society have been successful in ensuring interchange of medical thought between this country and Holland, a matter of importance in view of the serious barrier set up on each side of the short sea passage by unfamiliarity with the language. Very few Dutch monographs are accessible to English readers, therefore we welcome with particular pleasure Professor Murk Jansen's study of dysostosis, as it appears in his book on "Feebleness of Growth and Congenital Dwarfism."[1] The first lecture of a series by distinguished Dutch medical men was delivered before the Royal Society of Medicine on Jan. 17th, by Dr. J. K. A. Wertheim Salomonson, professor of neurology in the University of Amsterdam, who took for his subject "Tonus and Reflex." Research into the electrical response of muscle tissue has been especially brisk in Holland, probably owing to the fact that it was another Leyden professor, Dr. W. Einthoven, who invented the string galvanometer which widened so greatly the field of this research. Professor Salomonson began his lecture by classifying muscle contractions into groups according as they are or are not accompanied by demonstrable electric currents of action. Simple muscle twitches, always preceded by a double-phased action current, are typically found in deep reflexes, whether tendon or periosteal, and in the muscle clonus resulting from lesion of the lateral tracts in the spinal cord. Irregular alternating current with some 50 periods a second is characteristic of tetanic contraction, and is met with in every voluntary movement. Passive movement of a limb causes no oscillation of the galvanometer, and in myelitis with complete paralysis of the lower limbs enormous involuntary muscle spasms may occur without any action current being produced. Professor Salomonson went through a whole series of maladies affecting muscular tone, showing the changes in the electrical reactions and the lessons to be drawn from these changes. The lecture, with many explanatory diagrams, is to appear in an early issue of *Brain;* we are content merely to cite here one deduction of great interest which has resulted from these investigations. It is common knowledge that in lateral sclerosis the Babinski reflex reverts to the extensor type, which is normal in young children. The centrifugal impulses for the plantar reflex passing down the pyramidal tract being cut off, and the cerebral centrum thus put out of action, the spinal centrum for the extension of the hallux, which was an important one in the history of the race, reasserts itself, and is further heightened by the increased secondary tonus reflex of the cord, now no longer controlled by a higher centre. We felicitate Professor Salomonson on his contribution to exact medicine, and the Anglo-Batavian Society on its enterprise.

[1] Oxford Medical Publications, 1921.

THE HOUSING PROBLEM IN PARIS.

AT its last sitting, before the New Year adjournment, the Paris Municipal Council adopted a housing scheme. Mons. Etevenon, municipal inspector of houses, described the project, for which 14,000 metres of land have been secured in the Picpus quarter. There will be three streets with houses six storeys high, but the houses will be so placed and the space around so spacious that all the walls will be exposed daily to direct rays of sunlight. They will contain 628 tenements and there will be a large central square or playground. Of these 300 will consist of a kitchen and three or four rooms and 200 of a kitchen and two rooms. Each room will measure from 11 to 13 square metres. Then there will be 100 cabinets where the tenants can take douches and a steam laundry will be put at their disposition large enough for 80 tenants to do their washing at one and the same time. They will save much time and trouble by using the machinery available; and, though a small charge will be made, this will cost much less than if each tenant had to warm his own boiler and work his own mangle. The sum paid will help to defray the general cost. In the same way also shops and trading premises on a level with the streets will be let at commercial rents, to reduce the deficit which may result if, as proposed, the tenements are let at a low rental. The capital expenditure voted for this enterprise is 27 million francs, or at the normal rate of change £1,080,000; but as it will take three years to build these three new streets it is calculated that the cost will be much less towards the end than at the beginning of this period. In any case, the municipality feel they must strive to solve the housing problem, even if this involve financial loss. Besides, 628 good tenements, though involving a loss at first, will prove in the long run a profitable property. This is all the more probable as few tenements will offer such advantages. Nor is this the only enterprise of the sort the city of Paris has in hand, though it is the newest venture. Eleven groups of cheap buildings commenced before, and interrupted by, the war are now being completed. Buildings commenced by private enterprise, but abandoned, have been bought up by the municipality, and thus in a few months' time the city will be able to offer at cheap rentals some 8000 tenements to the distressed population. A great deal also has been done within a radius of 30 miles outside the capital to meet the lack of housing accommodation.

THE U.S. ARMY MEDICAL SERVICE.

PROBLEMS of reconstruction have had much attention in the United States during this year, perhaps in part because she has had fewer immediate anxieties than other nations; certainly they have been approached with great breadth of view. The latest evidence to come before us concerns the Army Medical Service, dealt with in a paper by Major F. Kramer, Medical Corps, U.S. Army, in the *Military Surgeon* for December. It has been decided that there shall be established at Washington, D.C., the Army Medical Centre. For it there has been reserved a site of great natural beauty, a well-situated large natural amphitheatre. Here will be built the large single building of the Army Medical School, where will be centred post-graduate instruction for all divisions of the Medical Department, including, be it observed, the Dental and Veterinary Corps, with complete laboratories for research work. Associated with this will be built a new hospital, the Walter Reed General Hospital of 750 beds. There will be houses for officers and men, and recreation grounds. The Surgeon-General's library and museum will be here, and the whole is expected to become an important unit in the post-graduate instruction of the country generally, and a common meeting place for all in the medical profession within and without the service. Meanwhile the education of officers is not being neglected, and 20 medical officers are at present seconded and undergoing special courses in civil medical schools. A new portal of entry has been opened to the service from the civil profession, for the best schools may recommend honour students, who are physically fit, to be house surgeons or house physicians in military hospitals for a year, after which, if approved, they are commissioned as first lieutenants. Orderlies, too, are being better trained, especially in work in laboratories and operating theatres, extra pay being given when qualification is shown. The pay of the Nurses has been raised 20 per cent., and they have been given relative rank. A new Army Medical Nursing School and Nurses Home will be part of the centre. Here army nurses will get a three years' training. This aims to be an ideal nursing school, to turn out a better trained body of nurses, and to maintain full and cordial relations with the profession at large.

PROFESSIONAL CONDUCT AND ERASURE FROM THE REGISTER.

THE periodical statement from the General Medical Council summarising the resolutions and decisions of the Council upon forms of professional misconduct which have from time to time been brought before them, in the exercise of their disciplinary jurisdiction over the members of the medical and dental professions, has just been issued. This jurisdiction was conferred upon the Council by the 29th Section of the Medical Act, 1858, and by the 13th Section of the Dentists Act, 1878. A few instances of professional misconduct are set forth, not as constituting a complete list of offences which may be punished by erasure from the Register, but as broad examples. The instances thus brought to the notice of registered medical and dental practitioners may briefly be described as follows:—

(1) *Certificates, notices, reports, &c.*—The signing and giving in a professional capacity of any certificate or document of a kindred character, for subsequent use in courts of justice or for administrative purposes, which is untrue, misleading, or improper. Such documents include certificates, notifications, reports, &c., under the statutes and Acts relating to births, deaths, and disposal of the dead; lunacy and mental deficiency; vaccination; factories; education; public health; workmen's compensation; notification of infectious diseases; national insurance; old-age pensions; merchant shipping; sick benefit, insurance, and Friendly Societies; the procuring of Foreign Office passports; the excusing of attendance in courts of law, in the public services, in public offices, or in ordinary employment; and in connexion with naval and military matters.

(2) *Unqualified assistants and covering.*—The employment in connexion with professional practice of an assistant who is not duly qualified and registered, or the enabling of any person, known to be unqualified and unregistered, to attend or treat a patient in respect of a matter requiring professional discretion or skill. (These rulings do not apply so as to restrict the proper training and instruction of bona fide students, or the legitimate employment of dressers, midwives, dispensers, surgery attendants, and skilled mechanics under the immediate personal supervision of a registered practitioner.)

(3) *Sale of poisons.*—The employment for his own profit and under cover of his own qualifications, by any registered practitioner who keeps a shop or other place in which scheduled poisons or preparations containing scheduled poisons are sold to the public, of assistants who are left in charge, but are not legally qualified to sell scheduled poisons.

(4) *Association with unqualified persons.*—Any assistance given, either by administration of anæsthetics or otherwise, to an unqualified person attending or treating any other person in respect of matters requiring professional discretion or skill.

(5) *Advertising and canvassing.*—The practices of (*a*) advertising by a registered medical practitioner with a view to his own gain, particularly if depreciatory of other practitioners, or of sanctioning such advertising; (*b*) employing or sanctioning employment of agents or canvassers for the purpose of procuring patients; and (*c*) associating with or accepting employment under any association which practises canvassing or advertising for the purpose of procuring patients.

(6) *Association with uncertified women practising as midwives.*—Knowingly enabling uncertified women, on pretence that such women are acting under direction, to attend women in childbirth, contrary to law. It is provided in the Midwives Act, 1902, and in the Midwives (Scotland) Act, 1915, that "no woman shall habitually and for gain attend women in childbirth otherwise than under the direction of a qualified medical practitioner, unless she be certified under this Act."

A registered practitioner who is proved to have committed any of the offences detailed above is liable to have his name erased from the Medical Register, and it is well that categorical warning should come periodically from the Council. It is clear that under several of the headings a practitioner through ignorance, coupled with carelessness, may be placed in a seriously unethical position.

THE REPORTING OF FOOD POISONING.

UNDER existing regulations neither medical practitioners nor the general public are obliged to report cases of food poisoning to the medical officer of health, but there is every hygienic and social obligation for doing so. A statutory duty rests upon medical officers of health to report to the Ministry of Health any outbreak of serious epidemic disease, and in a recent circular (Memo. 39, Foods) the Ministry requests medical officers, whenever they have reason to suspect that any death or outbreak of illness in their districts is due to food poisoning, promptly to notify the Ministry, which may be in a position to offer useful assistance in regard to the immediate measures to be taken, and to elucidate points at present obscure in the causation of food poisoning. Early notification may show that other cases are occurring elsewhere from similar causes—e.g., where one or two members of a household are suffering in consequence of the consumption of canned food from a particular tin other canned foods of similar origin may be causing illness elsewhere. In any outbreak where the implicated food has been prepared in the district the medical officer is advised to proceed at once with detailed investigations into the conditions of its preparation, and to obtain material for bacteriological or chemical examination, steps being taken the while to prevent further consumption of the suspected food by stopping its sale and recovering unconsumed portions of what has already been sold. Suggestions are made in the circular for the collection and examination of material for chemical and bacteriological examination, and the reminder is added that the serological reaction of the blood of persons attacked should always be bacteriologically investigated. An appendix to the memorandum contains the headings of inquiries appropriate for outbreaks of poisoning by meat foods and when contamination with inorganic poison is suspected.

THE PRESCRIBING AND DISPENSING OF IODINE IN LARGE DOSES.

WRITING in THE LANCET last year Mr. Tom Bird[1] drew attention to the success which Dr. Louis Bourdreau has met with for many years in the treatment of cases of tuberculosis with large doses of iodine. Mr. Bird, using iodine in similar dosage, has obtained very good results in many cases of arthritis. Commencing with 1 gr., the dose is increased to about 3 gr. thrice daily, the latter amount being equivalent to 36 minims of the tincture of iodine of the French Codex. No inconvenience was caused beyond slight nasal catarrh, and it is apparently suggested that the absence of potassium iodide in the French tincture may have contributed to this freedom from iodism. In this connexion we may remark that symptoms of iodism following the repeated administration of iodine are not unknown; iodism from this cause is undoubtedly rarer than from the ingestion of iodides, but, of course, the latter are much more frequently used. In a paper recently read before the North British Branch of the Pharmaceutical Society[2] it is stated that since the appearance of Mr. Bird's article these large doses of iodine have been frequently ordered, and some prescribing and dispensing difficulties have arisen in this connexion, partly through unfamiliarity with the solubilities of iodine on the part of prescribers. The French tincture may be ordered, but this is not convenient for dispensers, particularly as the preparation is made up with 95 per cent. alcohol, which is not official in this country and must be prepared by adding absolute alcohol to rectified spirit. It is suggested that each grain of iodine may be suitably dissolved in a mixture of 3 minims of ether and 9 of rectified spirit, or in 12 minims of rectified spirit if ¼ gr. of potassium iodide be added, a quantity which can hardly be considered objectionable. The strong tincture of iodine of the B.P. contains 1 gr. of iodine and ⅝ gr. of potassium iodide in 11 minims. According to the solubilities given, another convenient method would be to order each grain of iodine to be dissolved in 16 minims of rectified spirit. It seems that in Scotland, at any rate, a given number of drops of tincture is usually directed to be taken in water. The drop is, of course, a variable quantity; it is stated that 15 drops of the French tincture measure 10 minims, and that if this amount is added to less than about 5 ounces of water free iodine separates as a film on the surface. Such papers as the one quoted are to be welcomed as likely to clear up misunderstanding between prescriber and dispenser.

PUERPERAL AUTO-INFECTION.

ATTENTION has been drawn to the dangers of meddlesome midwifery more than once in the columns of THE LANCET. This danger is not to be considered less, but rather it is emphasised, by the discovery that pathogenic streptococci exist in the cervix and posterior cul-de-sac of the vagina before, during, and after parturition in women who have not been examined. At the same time, the results of bacteriological findings by Dr. G. Rustra, reported in the *Philippine Journal of Science* (1920, xvii., 119), seem to prove definitely that cases of auto-infection do occur in the puerperium. Eighty women were examined bacteriologically both ante-partum and post-partum, and the results classified according to the site at which bacteria were found, and whether these were hæmolytic streptococci, non-hæmolytic streptococci, or other bacteria. Only 9 of the 80 cases were sterile ante-partum and only 3 were sterile post-partum. *Streptococcus pyogenes* was found in 11 ante-partum cases; these caused infection in 4 cases, the streptococcus being twice recovered in pure culture and twice in association with *Staphylococcus aureus*. Of 3 cases with non-hæmolytic streptococci ante-partum, 1 suffered from fever in the puerperium. The author does not describe what precautions were taken to avoid contamination during the bacterial examinations, and in view of the varying results obtained by investigators using different methods this is a serious omission. The question is one upon which there is even now a great deal of difference of opinion. The majority of obstetricians believe, and clinical evidence appears to support their belief, that the vagina of a healthy woman does not contain pathogenic organisms and that auto-infection is very rare, if, indeed, it occurs at all. On the other hand, in a number of cases organisms have been found in the vagina of the pregnant woman, and these have been described as being of a pathogenic character and capable of causing puerperal septicæmia. If Dr. Rustra's observations are confirmed, and if his methods are such as to preclude all possibility of contamination, these results will tend to support the view that auto-infection is possible and probably not infrequent. At the present time, however, the available evidence, both clinical and bacteriological, points the other way.

[1] Intensive Iodine Treatment, THE LANCET, 1920, i., 546.
[2] George Walker: Note on Tinctura Iodi (French Codex), Pharmaceutical Journal, Jan. 1st, 1921, p. 4.

MATERNITY AND CHILD WELFARE IN INDIA.

THE valiant struggle of the Women's Medical Service of India against prejudice, dirt, and ignorance does not cease, and new methods are constantly being devised to popularise the health movement among Indian families. The annual report for 1919 of the National Association for Supplying Female Medical Aid to the Women of India records an increased Government subsidy of 2¼ lakhs (over £20,000). It is also recorded that all hospitals under members of the Women's Medical Service now have qualified matrons and are engaged in the training of Indian and Anglo-Indian nurses and midwives. The Council note the revival of activity in the attempt to improve conditions of childbirth, and emphasise the need for the training, followed by constant supervision, of the indigenous dai (hereditary midwife). The women of the poorer classes turn to the dai, even as in England they used to cling to the handy woman, and experience has shown that more useful work can be done at present by educating the dai than by attempting to supplant her. The Victoria Memorial Scholarships Fund has decided to assist only indigenous dais to become trained midwives, since the few better-educated women who desire training have other opportunities for obtaining assistance. Unfortunately the trained dai who works among those sections of the community tenacious of old customs tends to revert to former practices unless constantly supervised. An Association for the Provision of Health and Maternity Supervisors has been formed, but the difficulty of selecting candidates suitable to be trained for these higher posts is great. The standard of obstetrical knowledge required even of doctors, men and women, trained in India will also have to be raised if maternity conditions are to be improved. At present the universities require the candidate for a degree in midwifery to have conducted no more than six cases. On the other hand, Dr. D. Curjel, recently appointed medical secretary to the Victoria Memorial Scholarships Fund, records that interest and enthusiasm for child welfare schemes is becoming noticeable throughout the country. A further indication of this interest is the success of the Maternity and Child Welfare Exhibition held at Delhi in February last. A sumptuous volume,[1] excellently printed and illustrated, describes the various sections of this exhibition, and not only includes the leaflets and pamphlets issued, but reprints the lectures delivered. Among the medical lecturers were Dr. A. Lankester, Dr. Ruth Young, Lieutenant-Colonel A. Frost, R.A.M.C., Major F. Cragg, I.M.S., and Dr. Yamini Sen. The need for attention to child welfare in India could not be emphasised more strongly than in the results of two inquiries quoted by Dr. Lankester. The total number of pregnancies in a series of 50 married women who presented themselves at the Lady Dufferin Hospital at Karachi was 241. The number of children surviving was 20. In Delhi, of 1000 consecutive multiparæ attended in labour, 657 had lost their first-born.

[1] This report may be obtained on application (accompanied by 4 annas) to the honorary secretary, the Lady Chelmsford, All India League for Maternity and Child Welfare, Viceregal Lodge, Delhi This and the other reports referred to are published by the Superintendent, Government Printing, 8, Hastings-street, Calcutta, India.

A POST-GRADUATE SCHEME FOR LONDON.

THE Minister of Health, with the concurrence of the University Grants Committee, has appointed a Committee with the following terms of reference:—

"To investigate the needs of medical practitioners and other graduates for further education in medicine in London, and to submit proposals for a practicable scheme for meeting them."

The Earl of Athlone (chairman of the Governors of Middlesex Hospital) will act as chairman, and the following constitute the committee: Dr. H. J. Cardale; Sir Wilmot Herringham, M.D.; Sir George Makins, F.R.C.S.; Sir George Newman, M.D.; Sir Robert Newman, M.P.; Sir Edward Penton; Sir E. Cooper Perry, M.D.; Mr. J. Dill Russell, F.R.C.S.; and Dr. T. W. Shore. Mr. A. L. Hetherington will act as secretary of the Committee, and all communications on the subject should be addressed to him at the Ministry of Health, Whitehall, London, S.W.

PULMONARY AND INTESTINAL EMBOLISM SECONDARY TO PHLEBITIS OF THE LEG.

AT a meeting of the Société Médicale des Hôpitaux of Paris on Nov. 12th, 1920, M. Jules Amaudrut reported the following case, which is of interest from the standpoints of both pathology and therapeutics. A woman, aged 36 years, was admitted into hospital on July 26th, 1920, for phlebitis of one of the branches of the right external saphenous vein. On the postero-external surface of the calf was a little indurated sinuous cord, tender on pressure, with slight swelling of the surrounding tissues. The temperature ranged from 100·4° to 102·2° F. The limb was immobilised on a splint. The patient's condition remained stationary for a week. Then suddenly, on August 1st, an abundant bloody stool was passed. It consisted of red and blackish blood and black clots. There was no abdominal pain or tenderness. The general condition became worse, the face was slightly drawn, the pulse 130 and small, the respiration rapid. Ice was applied to the abdomen. During the day two other stools, less abundant but blackish, were passed. In the evening the patient's condition was better, the abdomen was slightly distended, but only slightly painful. On August 2nd there was another abundant hæmorrhagic stool followed by the same general symptoms. This general condition improved, but on the afternoon of August 4th the patient was seized with violent pain at the base of the chest on the right side, accompanied by intense dyspnœa, incessant fits of coughing, and expectoration of red and blackish blood. Examination of the right base showed slight dullness and crepitant râles of different sizes. The general symptoms were grave; the face was drawn, the pulse small and almost uncountable, and there were cold sweats. Morphine was injected at the site of pain and stimulants were given. In the evening the temperature was 103°. On the 5th the general condition was better, the pulse was 140, and the dyspnœa less. The pain in the side was still violent and the expectoration continued. On the 6th the symptoms of the 4th were repeated, but the pain was localised at the right shoulder, and the hæmoptysis was increased. Crepitant râles were heard all over the summit of the lung. This fresh embolism much aggravated the condition of the patient. On the following days improvement took place and the temperature fell to 100·4°. The expectoration gradually changed until it became like liquorice-juice, and then it became purulent. Auscultation always showed two foci of râles—at the base and apex—where there was also dullness with increased vocal fremitus. From the 10th signs of a cavity in each of these situations, but especially at the apex, developed. The expectoration became abundant and fœtid and the temperature hectic. A bedsore formed over the sacrum. On the 16th artificial pneumothorax was induced by injecting first 200 c.cm. of oxygen and then 300 c.cm. of nitrogen. On the following day the purulent expectoration was a little less abundant. On the 17th 1000 c.cm. of nitrogen were injected. On the 18th the expectoration had considerably diminished and 1500 c.cm. of nitrogen were injected. After this improvement was rapid; the temperature became normal in 24 hours and the expectoration was reduced to a few muco-purulent *crachats*.

PLAGUE IN PARIS.

IT has been known for some time that sporadic cases of plague have been occurring in Paris, and the fact that the diagnosis and treatment of plague formed the subjects of articles in the lay as well as the medical press made a question in the French Chamber pertinent. No figures of plague mortality have appeared in the official reports, but the censorship seems to be relaxing somewhat if we may judge from a series of six articles which appeared recently in *Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris* for Jan. 6th, 1921. The existence of an epidemic lasting from May to October is frankly admitted in a paper by Dr. E. Dujardin-Beaumetz and Dr. Edouard Joltrain, though they add that it is now nearly ended. The Paris authorities would be well-advised to take the public more fully into their confidence, for plague has to be fought with public coöperation.

THE Anniversary Dinner of the Medical Society of London takes place at the Wharncliffe Rooms, Hotel Great Central, on Tuesday, March 8th, at 7.30 P.M.

THE Hunterian Oration will be delivered at the Royal College of Surgeons of England, by Sir Charters Symonds, at 4 P.M., on Monday, Feb. 14th. On that evening H.R.H. the Prince of Wales will dine at the College with the President and Council. During the dinner the Prince will be admitted to the Fellowship; his diploma will be handed to him after his health has been proposed, and he will sign the roll.

AT a special meeting of King Edward's Hospital Fund for London, held at St. James's Palace on Jan. 26th, a report was presented containing specific resolutions for the preservation of hospital management and control. These were adopted and ordered to be forwarded to the Prime Minister, the Minister of Health, and the members of the Government Committee of Inquiry.

THE Milroy lectures of the Royal College of Physicians of London will be delivered by Dr. Martin Flack on Feb. 17th, 22nd, and 24th, his subject being Respiratory Efficiency in Relation to Health and Disease. For his Goulstonian lectures on March 1st, 3rd, and 8th Dr. George Graham has chosen Glycæmia and Glycosuria. The Lumleian lectures by Dr. A. Whitfield on March 10th, 15th, and 17th will deal with Some Points in the Ætiology of Skin Diseases.

THE Marquess of Linlithgow, on the nomination of the Secretary for Scotland, and Sir W. B. Peat, of the firm of W. B. Peat and Co., chartered accountants, have been appointed to the Committee which is inquiring into the financial position of the voluntary hospitals. The first full meeting of the Committee took place at the Ministry of Health on Wednesday, when evidence was given by Sir Arthur Stanley, Sir Napier Burnett, Lord Knutsford, and Mr. E. W. Morris.

DONATIONS AND BEQUESTS.—Miss Christina Christie, Rose Cottage, Oyne, now residing at Colorado, U.S.A., has sent a donation of £600 for the purpose of endowing a bed for the parish of Oyne in the War Memorial Cottage Hospital for Insch and district, and also £50 for the Oyne parish bed.—The proceeds, amounting to £146, from two successful fancy-dress balls recently held in the town hall, Banchory, were handed to Sir James Taggart's Fund for the Aberdeen Sick Children's Hospital.—The Great Northern Central Hospital, London, has recently received £22 from Miss L. McDonald (proceeds of entertainment at Camden House School) and £10 10s. from National Union of Teachers.

A COMPARISON OF THE USE OF BROWN AND WHITE SUGARS FOR PLAIN COOKING.

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DURING the rationing and shortage of white sugar, and when brown sugars were relatively easy and less expensive to obtain, many institutions, such as schools and hostels of various kinds, used brown sugars in cooking to a large extent, and discussions subsequently arose comparing brown and white sugars for plain cooking. Of course, where the colour of the cooked food is a matter of importance it is impossible to obtain good results with a coloured sugar, but experience of brown sugars in cooking seems to prove that the colour is the only serious disadvantage apparent in their use for ordinary cooking purposes.

Results of Analyses.

In order further to compare brown sugars with white an examination was carried out of some brown sugars collected from various sources. Each sample was obtained from a different shop and a different locality.

The determinations made were as follows:—

Percentage of (*a*) water; (*b*) ash; (*c*) cane sugar; (*d*) reducing sugars calculated as invert sugar. White granulated rationed sugar was used for comparison.

Sugar content.—The rationed sugar contained over 99 per cent. of cane sugar, only 0·5 per cent. of invert sugar, and a negligible quantity of water and ash. Of six samples of brown sugar examined—varying in colour from yellow to a dark brown—only two contained less than 90 per cent. of cane sugar, and in these two cases the deficiency of cane sugar was made up by a higher percentage of invert sugar. Two others contained approximately 92 per cent. of cane sugar, and the remaining two examined 95 per cent. The percentage of invert sugar ranged between 1 and 5, so that the percentage of total sugar (cane and invert) varied between 90 and 98, the average content being approximately 93 per cent.

Sweetening power.—The results of the total sugar content of the samples show that in sweetening power the average brown sugar compares unfavourably with a white sugar because it contains less sugar. The fact that part of its sugar is invert sugar is immaterial, as it is generally recognised that, though cane sugar has a greater initial sweetening effect upon the palate, the effect of invert sugar is more lasting, and in its total effect seems to be the sweeter of the two. In sweetening acid-containing substances the quicker sweetening effect of cane sugar is an advantage, as the acid effect upon the palate is immediate; but for most purposes the presence of a small percentage of invert sugar with the cane sugar is not a disadvantage.

Contents not sugar.—None of the sugars contained any albuminoid matter, and the ash content in every case was below 1 per cent., so that the sugars could not have been adulterated by any coarse adulteration, such as a fine sand. Though this kind of adulteration is not often met with nowadays, the difficulty of obtaining white sugar and the consequent increase in the sale of the brown might have been an incentive to the use of adulterants.

Two yellow sugars were examined for the presence of aniline dyes, but, as expected, none was found.

The water content of the sugars was also not high enough to indicate adulteration, the highest content of water being 4 per cent. and the average 2 per cent.

The impurities met with in the sugars were therefore evidently only those usual to raw sugars and due to incomplete refinement. In all cases the sugars dissolved readily to give a fairly clear solution, though, of course, coloured. There was only one sample which showed insoluble matter, which consisted of small wood shavings, which certainly would be objectionable in cooking, but were probably due to either lack of refinement or imperfect packing and storage.

Conclusions.

It is of very little value just now with fluctuating prices to make a comparison of the relative cost of brown and white sugars, but in buying brown sugar merely because of the lower cost the probable lower sugar content should be taken into consideration. From the analyses made there seems to be no objection to substituting brown for white sugar in plain cooking, except in the result upon the colour of the food when cooked. The colour of a brown sugar can be readily and simply removed by filtering a solution of the sugar through animal charcoal, but this would be impracticable for most households.

The adulterations found were merely such accidental impurities as would be removed upon further refinement of the sugar.

TUBERCULOSIS.

Sanatorium Mismanagement.

"You will not get results, gentlemen, until you reform the management of your public sanatoria for your poorer classes."

IN the bulky volume[1] in which the *Transactions of the National Association for the Prevention of Tuberculosis* (Eighth Annual Conference) have just been published there is the inevitable mixture of platitudinous and inspiring papers. Two of the latter type deserve special prominence, as their authors show that candour which is seldom aired at congresses except when only two or three are gathered together in the intervals between the official speeches. Speaking about sanatorium treatment, Dr. Charles L. Minor, of North Carolina, contrasted the achievements of private and public sanatoriums, pointing out that the successes of the former are traceable to that skilled, individualising, and interested treatment which is seldom obtainable in public institutions. These, he thinks, are apt to be exploited by medical officers of the come-and-go stamp as a stepping-stone to something better.

"The close personal relation of patient and doctor is usually lacking, yet in this disease such a relation is essential, and then you expect to get results. You will not get results, gentlemen, until you reform the management of your public sanatoria for your poorer classes."

Another point on which Dr. Minor was emphatic was the necessity for keeping early and late cases apart.

"..... if you expect to mix together your advanced hopeless cases and your incipient cases you will get few good results."

Speaking as the superintendent of a private sanatorium, he argued that the best arrangement provided separate quarters for advanced, moderately advanced, and incipient cases, so that patients in the last class should not hear the coughs nor see the coffins of patients in the first class.

"I get excellent results in people of modest means, and when you get proper conditions for those poor people, men put over them who will put their whole heart and soul and mind into their work and into each individual patient, you will see a wonderful change."

In short, according to this critic, sanatorium treatment for the working classes has failed because it is not sanatorium treatment, but a dismal parody; and medical officers who have worked in both private and public sanatoriums in this country will surely admit there is some truth in this unpalatable diagnosis. More cautious in his wording, but equally conscious of the need for reforms, Sir Henry Gauvain deplored the medical education that taught the student more about the internal economy of the frog than about tuberculosis. Both from what he said and what he implied it was evident that his criticism was directed rather against the educational system than the medical officer it evolved, but he also made the valuable suggestion that, as a check on the individual, candidates for the tuberculosis service might be first appointed, with adequate remuneration, as probationary tuberculosis officers, and that only after they have shown complete evidence of their fitness for their duties should they be transferred to the permanent staff.

[1] Adlard and Son and West Newman, Ltd. Post free 12*s.* 6*d.*

The Ætiology of Post-influenzal Pulmonary Tuberculosis.

Among the many recent papers on the relation of influenza to pulmonary tuberculosis two are of special interest because they throw light on the origin of post-influenzal pulmonary tuberculosis and show clearly the salient differences between this condition and non-influenzal tuberculosis. Dr. O. Kieffer,[2] of the Municipal Chest Hospital in Mannheim, has found that 55 of his patients, or 20 per cent. of all the admissions to his hospital between Dec. 1st, 1918, and June 1st, 1919, had developed the first signs of pulmonary tuberculosis in connexion with an attack of influenza. As a class, these patients were characterised by comparatively good physique, absence of a personal or family history of tuberculosis, and by the rapidly progressive nature of the tuberculosis, which often proved fatal in a few months. These patients, mostly young adults, failed to react to v. Pirquet's test, betraying in this respect a sinister resemblance to patients with measles. But the most instructive and distinctive feature of these cases was the X ray evidence. Skiagrams taken sufficiently early in the disease were curiously uniform, showing massive tumour-like shadows in the hilus region, on one or both sides. In early cases the lungs themselves threw no abnormal shadows, and the X ray picture was exactly identical with that of hilus tuberculosis in childhood. Between this early stage and the advanced stage, with only the apices of the lungs intact, there were intermediate stages, showing the radiating spread of the disease from the hilus. In a study of post-influenzal tuberculosis, as observed at Nakkebölllefjord Sanatorium in Denmark, Dr. S. M. Saxtorph[3] confirms Dr. Kieffer's findings in almost every respect. He notes that there seemed to be little or no connexion between the severity of the influenza and that of the subsequent tuberculosis. As illustrating the origin of the pulmonary disease in the hilus he records the case of a woman, aged 33, with no family or personal history of tuberculosis. In November, 1918, she contracted influenza, and was confined to bed almost for a month. No tubercle bacilli could be found in her scanty sputum, but she continued to cough and lose weight and to complain of lassitude, anorexia, and night sweats. There were doubtful signs over the front of the right lung, and the evidence of the fluorescent screen was indefinite, but a skiagram clearly showed abnormal hilus shadows on both sides, and beaded, radiating shadows, passing from the hilus to both the lungs, the apices of which were perfectly clear. Dr. Saxtorph suggests that in the many cases of post-influenzal lassitude and debility, with cough, night sweats, and subfebrile temperatures, reactivation of an old hilus tuberculosis is to blame. Truly, as Dr. A. K. Krause has said, "the patient is as resistant as the shell of his tubercle"; and when influenza is prevalent the resistance of this shell, as evolved by a dense, fibrotic reaction to repeated stimuli, often determines the patient's fate.

The International Artificial Pneumothorax Society.

This society was originally established as a bond of union between medical men interested in artificial pneumothorax all over the world. Now that this treatment has received general recognition the society has modified its programme, limiting its functions to that of a central exchange, so as to enable its members to direct their patients, when travelling abroad, to fellow members and experts in this highly technical treatment. In the past patients, who travelled afar and who required refills without the inconveniences of returning home for this purpose, have often experienced difficulties in finding practitioners expert in this treatment. The cost of membership is Fr.5, which should be sent to Professor Carpi, Lugano, Switzerland.

[2] Beitr. z. Klin. d. Tuberkulose, 1920, vol. xliii, p. 204.
[3] Hospitalstidende, 1920, vol. lxiii., p. 1.

SELBORNE SOCIETY.—**The Ramble Section of this** society is paying a visit to Middlesex Hospital and Medical School on Saturday, Feb. 5th, meeting outside the hospital at 2.30 P.M.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Ten Years of Public Health in Ontario.

ACCORDING to Dr. J. W. S. McCullough, chief officer of health for the province of Ontario, considerable advance has been made in public health matters in spite of the fact that during half of the decade the war was in progress. At the beginning of the period the Board of Health had undertaken to consolidate the Public Health Laws, to assist the antituberculosis campaign, to further education concerning prevention of disease, and to improve the methods of administration. The Ontario Health Act was consolidated in 1912, with a view to assisting local authorities and medical officers of health. A number of district medical officers were appointed, but county officers under the Provincial Board of Health have not yet been installed. Local appointments of medical officers of health now imply some degree of permanency; previously the office changed hands every year. Moreover, the medical officer, who was formerly grossly underpaid, can now secure a proper adjustment of his salary on application to the county judge. Many full-time men in the larger cities are receiving a fair remuneration, and each year sees fewer salary disputes and fewer efforts to secure the dismissal of medical officers of health.

The number of sanatoriums in Ontario has grown from 10 in 1910 to 25 in 1920. The provincial Government now provides an amount up to $4000 towards the cost of building a sanatorium, and grants the sum of $3.50 weekly towards the cost of maintenance of each patient. As the results of this policy the annual grants for maintenance have increased year by year from $26,000 in 1910 to $279,000 in 1919. The accommodation for patients in sanatoriums, amongst which are included several preventoriums, is about 2000, as compared with 615 ten years ago. Practically the whole cost of the antituberculosis work in Canada, with the exception of the Federal Government's annual grant of $10,000 to the Canadian Association for the Prevention of Tuberculosis, has been borne by the provinces. During the present year, for exhibition purposes and educational campaigns, the Ontario Board of Health has at its disposal $9000. In 1914 the Provincial Board began to supply county boards with antitoxin at about one-third its commercial price. Two years ago tetanus antitoxin, typhoid, pertussis and small-pox vaccines, anti-meningitis serum, preventive treatment of rabies, and gonorrhœal ophthalmia were first supplied entirely free to physicians, boards of health, and the public generally. During the war the Board's laboratory in Toronto supplied almost all the typhoid and paratyphoid vaccine used by the Canadian Army; these were furnished free of cost—which would have been approximately a quarter of a million dollars—to the Department of the Canadian Militia.

Some years ago the Board began to establish laboratories. There were two of these in 1910, and their number will shortly be increased to seven. The Toronto laboratory, whose main work is the manufacture of pertussis, typhoid, and paratyphoid vaccines, has recently added that of phenarsenamine, which will be supplied free to clinics, to hospitals, and to boards of health.

The Canadian Medical Association Journal.

This journal is shortly to be enlarged; in a year or two a change from monthly to semi-monthly publication is contemplated, and later a weekly issue will be attempted. The Ontario Medical Association, which recently negotiated for an official journal of its own, has thrown in its lot with the national medical journal: the latter will contain news and editorial matter which will be of interest to the medical profession throughout Canada.

Medical Students at the University of Toronto.

The official figures given by the registrar of the University of Toronto show an attendance of 4566 students in all branches. In the Department of Medicine in 1914–15 there were 660 medical students; in

1919–20 there were 1284 registered; in 1920–21, 1009. The medical staff was increased from 145 in 1914–15 to 189 in 1920–21. The proposal has recently been made to limit to 90 the number of students admitted to the faculty of medicine each year. Some objection has been raised to this; the University of Toronto is a State-aided institution largely financed by the Ontario Government, and it is felt to be unfair to exclude anyone desirous of pursuing medical studies in the provincial university. It is doubtful if the Ontario Legislature—now composed largely of farmers and labour members—would support any limitation of the number of medical students in that province.

Deaths from Diphtheria in Ontario.

Dr. J. G. Fitzgerald, professor of hygiene in the University of Toronto, and director of the Connaught Laboratories of the Ontario Board of Health, has recently made an analysis of the deaths from diphtheria in Ontario for the years 1880 to 1918 inclusive. The fall in the death-rate is particularly noticeable from 1906 to 1918. Despite a steady increase of population from 1,884,000 in 1880 to 2,800,000 in 1918, the total number of diphtheria deaths fell from 1251 to 335 in the years named. An interesting comparison is made of deaths from diphtheria in and out of hospital. In seven consecutive years the percentages are as follows:—

	1912.	*1913.*	*1914.*	*1915.*	*1916.*	*1917.*	*1918.*
In hospital	8·0	6·15	7·82	6·51	7·00	4·18	6·40
Out of hospital ...	12·63	10·10	10·29	12·91	13·14	10·90	19·62

A considerable number of patients were admitted to hospital in a moribund condition, dying within 24 hours of admission.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Illness of the Governor-General.

SHORTLY after fulfilling social engagements during "Race Week" (first week in November) in Melbourne it was announced that Lord Forster was suffering from a severe attack of tonsillitis. A day or two later a further announcement was made that the illness was diphtheria. The disease ran a favourable course, and His Excellency was able to leave for Sydney on Dec. 1st, where he will continue in residence for some weeks. No other cases were reported among the staff at Federal Government House. Diphtheria has continued to prevail almost in epidemic form in Victoria for the past seven or eight years, and although the death-rate has been comparatively low, upwards of 2000 deaths have occurred during the period.

University Finances.

The special appeal to the public for a sum of £100,000 by the Melbourne University has not so far resulted in any notable response. Upwards of £30,000 has been subscribed in small sums, and it is possible another £20,000 will be reached apart from any large gift. The Sydney University has decided to raise the fees in all schools next year, in some instances as much as 50 per cent. The high cost of materials is given as a reason for the step.

Lumbar Puncture and Meningitis.

At the October meeting of the Victorian branch of the British Medical Association Dr. R. Webster, pathologist to the Children's Hospital, Melbourne, read the results of experimental work undertaken to test the possibility of setting up a meningitis by lumbar puncture. Dr. Webster stated that when he undertook the investigation he was unaware that some American observers had published conclusions based on similar work, and he purposely avoided consulting their paper until his own results were complete. Dr. Webster said: "I feel warranted in urging that the lumbar puncture needle should not be employed except in the presence of definite clinical signs of meningitis, and in deprecating its use as a possible royal road to the diagnosis of an obscure condition." Dr. Webster concluded there was definite risk of infecting the spinal meninges by lumbar puncture in the presence of a severe septicæmia. Once decided upon, as small an amount of fluid should be removed as is consistent with diagnostic requirement. His experiments were performed upon monkeys and employing the pneumococcus as the infecting organism.

Prohibition.

The polls on the liquor question recently taken in Victoria and Queensland have resulted in a general defeat of the prohibitionists. In Victoria only two small licensing districts voted "No licence." The figures generally disclose the fact that public opinion is somewhat evenly divided, and that results might swing either way if a simple majority of votes determined the result. It is possible that in Victoria local option polls will be abolished in favour of the Licence Reduction Board, a semi-judicial body which has been in successful operation for over 12 years and has closed more than 1300 hotels in that time. In New South Wales this legislation has been copied owing to the failure of local option polls in that State. In Queensland the local branch of the B.M.A. carried a motion favouring prohibition.

Dec. 8th, 1920.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

CITY OF EDINBURGH.

IN his annual report for the year 1919 Dr. A. Maxwell Williamson points out that there are certain wards within the city which, with unvarying regularity, occupy the unenviable position of having excessive mortality from nearly all causes. In Edinburgh, as in nearly all large centres of population, there are wards where death-rates are so much in excess of the average as to render the conditions prevalent in them subject-matter for serious consideration. These conditions are, of course, intimately associated with defective housing. In insanitary overcrowded districts the sickness and death-rates are generally in excess of the mean average. During the year there were 5583 deaths within the city boundaries, giving a death-rate of 16·5 per 1000. This relatively high rate is, in part at least, attributable to the outbreak of influenza which visited the city in the early part of 1919 and increased the rate in round figures by 2 per 1000.

Treatment of tuberculosis.—Tuberculous disease yields slowly to the efforts which are being made in Edinburgh towards effectively dealing with it. The number of cases notified was slightly below that for the previous year and constitutes the lowest figure yet attained. There were, however, 602 cases of pulmonary tuberculosis notified in addition to a considerable number of notifications of tuberculous disease affecting organs other than the lungs. Of the 602 notified cases, 359 received institutional treatment. Many of the patients in the early stage of the disease improved markedly in health or were cured, while the advanced cases, which eventually proved fatal while under treatment in hospital, experienced the advantages of a well-appointed sanatorium, and their friends were relieved of the anxieties and risks inseparable from attendance on a sufferer in an advanced state of the disease. At the Royal Victoria Dispensary every effort was made to detect cases of phthisis in the early stages of the disease with a view to immediate treatment, and, in Dr. Williamson's opinion, the tuberculosis dispensary may possibly hold out more hope in connexion with the general crusade against tuberculosis than is contributed by other branches of the work. In this connexion, however, he repeats what he has often said before—namely, that the real hope of ultimate success in overcoming the disease rests not in the multiplying of

sanatoriums, or even tuberculosis dispensaries, but is centred in the accession of a supply of suitable and sanitary housing accommodation. Much of the expense at present incurred on the provision of institutions for the cure of phthisis might well be diverted toward the object of prevention rather than by lavishing expenditure on efforts to cure, which, it is submitted, yield returns not commensurate with the financial outlay involved.

Isolation of measles.—For many years Dr. Williamson has wished to have more beds available for the isolation and treatment of measles. The Scottish Board of Health are now directing attention to its importance, and it is hoped that amalgamation and reorganisation may set free beds for the treatment of this disease. The existing somewhat restricted accommodation in Edinburgh has, however, been utilised to the fullest extent. The most serious cases and those most urgently requiring removal on account of their surroundings were regarded as having the first claim upon the available accommodation. It was found possible during the year to remove 500 cases of the malady to hospital. The total mortality-rate of this disease amongst those treated in hospital amounted to 10·1 per cent., as contrasted with a similar rate of 2·4 per cent. in the case of scarlet fever. This serves to emphasise the fact that measles, more particularly in young children, is more to be feared than many other forms of infectious disease, though it is popularly regarded as of relatively small importance.

METROPOLITAN BOROUGH OF ST. PANCRAS.

Dr. T. Shadick Higgins, in his annual report for 1919, has the satisfaction of recording the fact that the mortality in the borough during the year under report was the lowest on record, in spite of the fact that the ravages of the influenza epidemic continued during the earlier months. For the first time the net St. Pancras deaths for the year were less than 3000, and the annual death-rate was down to 13·4 per 1000 civil population. The deaths of infants under one year of age also were less in number than in any previous year, the rate being 88 per 1000 births. In Dr. Higgins's opinion, however, the deaths of infants remain more numerous than they need be, and much patient effort to reduce their number is still required. In regard to births, the continuous decline which had been observed during the war reached its greatest depth in the middle of 1919, but during the last two quarters there was a marked increase and the birth-rate for the year as a whole amounted to 16·7 per 1000 of the total population. As a result of the favourable variation in the births and deaths there was an excess of births over deaths of 894 for the year, as compared with an excess of deaths over births of 596 which was recorded in 1918. In reference to infectious diseases, the outstanding feature of the year was the cessation of the outbreak of influenza. This raged during part of the summer and autumn of 1918, and was still grave in the spring of 1919, but had almost spent itself by the end of the first quarter, since which time there has been no serious recrudescence. The total St. Pancras deaths certified during 1919 as being caused by this disease numbered 260, as compared with 700 in the previous year, but the number of deaths actually due to the epidemic was no doubt even greater than these figures indicate. The mortality from tuberculosis, amounting to 341 deaths, was lower than usual, and from both measles and whooping-cough much lower than for many years. Scarlet fever was more prevalent than in the previous three years, though the deaths were few, the cases being of a mild character. There was no increase in the prevalence of diphtheria. Typhoid fever reached a lower point than ever before, only seven cases being notified, and it is satisfactory to note that the decline in cerebro-spinal fever, which has taken place since the outbreak of 1915, was continued. A considerable number of men suffering from malaria and dysentery acquired abroad on active service have returned to civil life, but there appears to be no tendency for the disease to spread, not one case acquired in England having been reported in St. Pancras.

SCHOOL MEDICAL SERVICE.

HEALTH OF SCHOOL CHILDREN IN BELFAST.

A discussion has been going on in the Belfast press upon the condition of the primary schools of the city and its relation to the health of the children in attendance upon them. There are over 300 primary schools in Belfast under the direction of the Board of National Education. In a certain proportion of cases two schools are lodged in the same building. Most of the newer schools are good and many of them are excellent. But there are about 80 old schools whose condition has long been recognised as a source of danger to the children, and a serious reproach to a wealthy and progressive community. Many of these schools were constructed as appanages to various churches and are totally unsuitable for educational purposes. Some of them consist of a single large apartment, with, perhaps, one small adjoining class-room. As a result several classes are conducted in the same room, involving noise, slackness of discipline, and a heavy tax upon the nerves of both teachers and scholars. Many of them abut upon noisy and crowded thoroughfares, and ventilation is sacrificed to the necessity of comparative quiet. The sanitary arrangements are in many cases deplorably defective, and cleanliness leaves much to be desired. A large percentage of the older schools are destitute of playgrounds, and at the interval the children have the alternative of either turning out into the streets or taking their relaxation and their lunch in a stuffy apartment of which the air has been fouled by several hours of continual school. There is no medical inspection, and the way to the dissemination of infectious disease is left open. Further, the increase of school accommodation has not kept pace with the increase of population of the city. There are in round numbers 70,000 children of school age in Belfast. If overcrowding were strictly prohibited and the necessary amount of air- and floor-space secured for each scholar the present accommodation would suffice for only some 55,000 scholars. It is impossible to say precisely how many children are deprived of all education, but it is clear that in the present deficiency of accommodation it is not easy to enforce the law of compulsory attendance.

It cannot be said that the city has been indifferent to the above deplorable state of affairs. It is more than a generation ago since the late Dr. W. A. MacKeown pointed out the defects which existed at that period and the resulting dangers to the health of the children. These matters have been repeatedly ventilated in the press and at public meetings. Several occupants of the Lord Mayoral chair, notably Lord Shaftesbury and the late Alderman R. J. McMordie, interested themselves in this question, but found their efforts frustrated by legal difficulties. Under the National Board system there is no power on the part of local authorities to provide schools adequate to the needs of the population. There is no local education rate. When a new school is needed some individual, often a clergyman, has to raise one-third of the prospective outlay upon buildings before any help is available from the National Board. That such a system should have lasted for nearly a century shows with how little wisdom the world is governed. When Mr. Long was Chief Secretary for Ireland a deputation waited upon him in Belfast and pressed these matters upon his attention. He heard the deputation courteously and did not dispute their facts, but his reply amounted to this: "Help yourselves; provide the requisite funds for the proposed reforms." Unhappily, it required legislation to carry out this admirable advice, and politicians were shy of the difficulties surrounding Irish primary education. There was a deadlock, and that deadlock still continues. Mr. MacPherson tried his hand at the question, with what success all the world knows. The religious difficulty is, unhappily, acute in Ireland, and tends to stop the wheels of educational progress.

The new political regime in Ireland may open a new era in education. There can be little doubt that one of the first tasks of the Ulster Parliament will be to deal

with the question of primary education. Many of the old schools must be swept away. New schools must be constructed to meet the present clamant needs, and they must be up to the full modern standard, both from the point of view of education and of health. Medical inspection must be enforced and treatment centres for children instituted. The cost need not be large. Experience in England and Wales shows that it averages about 2*d*. per child. A proper standard for teachers must be set up and remuneration must be adequate. To what extent tuberculous infection occurs in childhood and remains latent until adolescence or early adult life is a question to which no final answer can yet be given, but the possibility cannot be denied, and many would probably go further and affirm that this mode of infection is common. If this view is sound, the hygiene of schools becomes a matter of urgent importance, apart from its importance from other points of view. That infectious disease—measles, scarlet fever, diphtheria, &c.—is often contracted at school admits of no doubt. England was late in adopting the principle of the medical inspection of schools and school children, and the Act applying to Ireland is so hedged in by restrictions as to be practically inoperative. It is a matter urgently calling for attention.

REPORT OF SCHOOL MEDICAL OFFICER FOR SHEFFIELD.

IT was not found possible to resume the routine inspection of school children at Sheffield until April, 1919, when a commencement was made with the group of leavers, followed in October by that of entrants. The total number so examined was 12,931, but, in addition to these, 23,379 special cases were seen at the schools. The defects requiring treatment most frequently found in the routine inspections were those of vision (1443) and of the nose and throat (1112); and, in addition to these numbers, amongst the children specially examined there were found to be 2215 and 1545 respectively needing treatment for these two conditions. Organic heart disease was diagnosed in 103 cases in the code groups (0·8 per cent.), 73 being recommended for treatment and 30 being kept under observation. There was no defective nutrition of any importance among the Sheffield children, only 8 being found to need treatment in the code groups and 27 among those specially brought forward. Not a single case of definite pulmonary tuberculosis from among the 13,000 children examined in the code groups was referred for treatment, and only 3 children were recommended to be kept under observation for this disease. This is a noteworthy fact in a large industrial city such as Sheffield. The existence of the disease was suspected in 35 children (in the code groups), and in 39 others specially examined (of whom 24 and 37 were respectively recommended for treatment). In the section of the report dealing with physically defective children, it is stated (p. 43) that 312 children "liable to school attendance" are suffering from "crippling due to tuberculosis," of whom 44 are attending public elementary schools. Out of the 12,931 children systematically examined only 8, and among the 23,379 special cases only 27, were found to be suffering from malnutrition. Infectious skin diseases (ringworm, scabies, impetigo, &c.) were not especially prevalent in the code group children (257 cases in all); but, in his report on the work of the X Ray and Skin Department, Dr. E. F. Skinner tabulates 8745 cases including 1158 ringworm, 4159 impetigo and sore head, and 1634 scabies. The increase in scabies, due to infection from "the front," is shown by comparison of the average weekly number admitted to the school clinic (3.45) in 1912 with that in 1918, which was 54·63. Under the treatment formerly used there had been an average of 56 days exclusion from school; by the adoption of bath treatment the exclusion was reduced to an average of 12 days. The cost was practically the same, and whereas under the old system of home treatment 5·46 per cent. became re-infected, with the bathed cases the percentage was only 1·03. The efficiency is entirely due to adequate supervision by the nurses in charge. With regard to defective vision, 1443 children were referred for treatment out of the total 11,917 examined, or 12·11 per cent. Details are furnished as to the cases treated, numbering 3473 in all, of whom 1755 were boys and 1718 girls. Among boys there were 648 cases of hypermetropia and hypermetropic astigmatism, and 106 of myopia and myopic astigmatism; also 63 cases of mixed astigmatism. Among girls the respective numbers were 674, 125, and 118; 576 boys and 458 girls were treated for squint. One of the most difficult conditions to treat satisfactorily in school children is that of chronic ear discharge; of 450 such cases, 96 only were returned as cured or improved. Of 377 cases of deafness without discharge, 166 were cured or improved. It is noted, however, that attendance is becoming more regular now that the war is over. Dr. Thomas Chetwood, who presents this report as school medical officer, regrets the recent decision of the School Management Subcommittee that playgrounds and public parks cannot usually be regarded as satisfactory class-rooms. At Whiteley Wood Open-air School, which was open from March to December, there were 119 children in average attendance; 93 were found fit to return to ordinary school attendance at the end of the year. Physical training and organised games are carried out with excellent results on the health of the children, accompanied by "a marked increase in alertness." Mr. Henry Cole, however, the training superintendent, points out that a cinder surface for the recreation ground is unsuitable.

URBAN VITAL STATISTICS.

(Week ended Jan. 22nd, 1921.)

English and Welsh Towns.—In the 96 English and Welsh towns, with an aggregate population estimated at 18½ million persons, the annual rate of mortality, which had been 16·6, 14·0, and 12·8 in the three preceding weeks, rose to 13·3 per 1000. In London, with a population of 4½ million persons, the death-rate was 12·9, or 0·3 per 1000 above that recorded in the previous week, while among the remaining towns the ratio ranged from 4·5 in Ipswich, 6·2 in Ealing, and 6·4 in Edmonton to 20·7 in Tynemouth, 21·8 in Preston, and 22·5 in Middlesbrough. The principal epidemic diseases caused 223 deaths, which corresponded to an annual rate of 0·6 per 1000, and comprised 72 from diphtheria, 71 from infantile diarrhœa, 35 from whooping-cough, 29 from measles, 12 from scarlet fever, and 4 from enteric fever. Measles caused a death-rate of 3·2 in Middlesbrough, whooping-cough of 1·7 in Newport (Mon.), and diphtheria of 1·0 in East Ham. There were 4350 cases of scarlet fever, 2618 of diphtheria, and 1 of small-pox under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, against 4413, 2597, and 1 respectively at the end of the previous week. The causes of 40 of the 4746 deaths in the 96 towns were uncertified, of which 9 were registered in Birmingham, 5 in Gateshead, 4 in Hull, and 3 in Liverpool.

Scottish Towns.—In the 16 largest Scottish towns, with an aggregate population estimated at nearly 2¼ million persons, the annual rate of mortality, which had been 18·4, 18·4, and 15·9 in the three preceding weeks, was 15·8 per 1000. The 329 deaths in Glasgow corresponded to an annual rate of 15·6 per 1000, and included 8 from whooping-cough, 4 from diphtheria, 3 from infantile diarrhœa, 2 each from small-pox and measles, and 1 each from enteric fever and scarlet fever. The 150 deaths in Edinburgh were equal to a rate of 17·5 per 1000, and included 4 from influenza, 3 from measles, and 2 each from diphtheria and infantile diarrhœa.

Irish Towns.—The 135 deaths in Dublin corresponded to an annual rate of 16·6, or 1·3 per 1000 below that recorded in the previous week, and included 2 each from whooping-cough, diphtheria, and infantile diarrhœa. The 148 deaths in Belfast were equal to a rate of 18·5 per 1000, and included 6 from whooping-cough, 3 from infantile diarrhœa, and 2 from measles.

LITERARY INTELLIGENCE.—Mr. Henry Kimpton will publish shortly the following new books and new editions:—"Psychopathology," by Edward J. Kempf, M.D.; "Block Anæsthesia and Allied Subjects, with Special Chapters on the Maxillary Sinus, the Tonsils, and Neuralgias of the Nervus Trigeminus," by Arthur E. Smith, D.D.S., M.D.; "Hygiene, Dental and General, by Clair Elsmere Turner, with chapters on Dental Hygiene and Oral Prophylaxis by William Rice; "Dental Pathology and Therapeutics," by Henry H. Burchard, M.D., D.D.S., sixth edition. Rewritten by Otto E. Inglis, D.D.S.

Correspondence.

"Audi alteram partem."

PROGNOSIS IN ENCEPHALITIS LETHARGICA.

To the Editor of THE LANCET.

SIR,—In view of the notice which this disease is now receiving I am authorised by Sir George Newman to send a brief note on its prognosis so far as it appears from the collection of case reports made by me at the Ministry of Health.

A study of these reports, together with an examination of several old cases, shows that in many instances the later stages of the disease may be very prolonged and the source of much anxiety both to the patient and to his medical attendant. Facial and ocular palsies, marked paresis, and sometimes paralysis, of a limb or limbs, and tremors in the parts so affected are constantly mentioned as existing after the patient has resumed, or partially resumed, his normal occupation. In addition, the higher faculties are apt to remain for some time distinctly impaired, so that loss of memory, defects of speech, mental lethargy, and a general loss of intellectual tone result. The character, too, not uncommonly becomes changed, and often for the worse, especially in children. It may be noted in passing that MM. Harvier and Levaditi in a recent paper[1] support the conclusion reached by Marary—viz., that the sequelæ of epidemic encephalitis are often no more than the symptoms of a form of the disease with a prolonged evolution.

It will be recalled that soon after the disease appeared in this country and prior to Jan. 1st, 1919, when encephalitis lethargica became a notifiable disease under the Public Health (Acute Encephalitis Lethargica and Acute Polio-encephalitis) Regulations 1918, a special inquiry was initiated by the Ministry with the object of gaining information concerning the epidemiology and clinical characters of the disease. The material for investigation and the knowledge then available were both limited, but a full and carefully compiled report on the subject was issued by the Local Government Board in 1918.[2] At the time this report was issued the conclusions reached concerning the full course of the disease in individual cases and the ultimate fate of its victims were necessarily guarded and provisional in character. The mortality-rate, for instance, in Dr. MacNalty's series of 168 cases worked out at approximately 22 per cent. Of the 541 cases of encephalitis lethargica notified during 1919 from England and Wales, no less than 286 proved fatal—a mortality of 54·6 per cent. A later review of this series resulted in the elimination of a certain number of fatal cases by reason of mistaken diagnoses, but even so the death-rate figure remained at 50 per cent.—a mortality which is probably much higher than is generally supposed. The fatality is greatest in those over the age of 30.

I may add that the Ministry of Health, in conjunction with the Medical Research Council, are actively continuing the investigation of this disease in its epidemiological, clinical, and pathological aspects. This coördination has already resulted in the successful transmission of the virus of encephalitis lethargica to monkeys in the Derby case, which was reported in the annual report of the Chief Medical Officer of the Ministry for 1919–20. The detailed information regarding notified cases which we are receiving from the medical staffs of institutions, medical practitioners, and medical officers of health is proving of great value, not only as material for ultimate tabulation, but as a guide to the selection of cases for special investigation.

Possibly some of your readers can supply information on the after-history of cases notified during 1919, supplementary to that which they have already sent in reply to schedules of inquiry. Any such information would be specially welcome.—I am, Sir, yours faithfully,

ALLAN C. PARSONS,
Ministry of Health, Jan. 24th, 1921. Medical Officer.

[1] Bull. et Mém. Soc. Méd. d. Hôp. de Paris, Dec. 9th, 1920.
[2] Report of an Inquiry into an Obscure Disease, Encephalitis Lethargica, New Series, No. 121.

MENTAL DEFECT AND CRIMINAL CONDUCT.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Nov. 13th, 1920, there were published two interesting addresses by Sir Bryan Donkin on the mental condition of criminals and delinquents. I do not know whether he has heard of the advances in the treatment of delinquents which we have worked out in connexion with several of the criminal courts in various cities of the United States. I am myself at the head of the medical service attached to the Supreme Bench of Baltimore City, which was established by me, with the aid of the judges of the bench some five years ago. Every accused person who shows any signs of mental abnormality or who has a record as an habitual offender is examined mentally, and a report is made on his condition to the court before his trial.

Our medical service also deals with all questions of legal medicine that come up in connexion with our courts. In all cases of possible homicide the autopsy is either made by me or in my presence, and I report direct to the chief prosecuting officer. My office also takes care of other matters for the police, such as the investigation of blood stains, foot prints, and the like. I am also called into the Civil Courts as the court's expert on various questions, such as the credibility of a witness, the possible limits of pregnancy in bastardy cases, the wage-earning ability of men involved in non-support cases, &c. About half of my work is that of a psychiatrist; the other half includes all medico-legal questions. Our idea for our medical service is that it should be as it were the watcher at the gate of the Criminal Court, which examines all those who come to the gate, and turns aside into the proper institutions those cases that are mentally deficient or mentally diseased, or who show any symptoms that may make them unfit for confinement in a penal institution. In this way we attempt to keep out of our prisons the mentally deficient and the extreme physical cases, as well as those who are actively mentally disturbed. In short, we attempt to meet the very difficulty which was brought out in Sir Bryan Donkin's article, so that each case can be treated by the court, rather as an individual problem of badly adjusted personality than as a mere infraction of certain laws or regulations. In Chicago and in Boston there are these medical services attached to the courts, but they are more intimately connected with the purely mental side of the entire question.

I should be very glad to send you any further information about our medical service, if your readers are interested in the matter.

I am, Sir, yours faithfully,

JOHN R. OLIVER,
Medical Officer, Supreme Bench of Baltimore.
Baltimore, U.S.A., Jan. 12th, 1921.

THE DIET OF WELL-TO-DO CHILDREN.

To the Editor of THE LANCET.

Scene: O.P. Department of General Hospital, A.D. 1884.
Personæ: Mother with infant in arms (the latter crying and eating a piece of cake). Hospital House Physician.
H.P.: Well, what is the matter?
Mother: Baby has diarrhœa and vomiting.
H.P.: What do you feed your baby on?
Mother: A bit of what we have ourselves.
A severe lecture from H.P. to the mother on the iniquities of her treatment of a baby of 8 months old. Indignant mother leaves the hospital, saying that she, the mother of six healthy children, is not there to be lectured by a young boy!

SIR,—Was the mother right or was I right? The work of Sir Arbuthnot Lane during the last 20 years has brought forcibly before the profession a problem that it has to answer one way or the other. Is he right or not? If he is right then we have to accept that many chronic diseases, of the causes of which we have been in ignorance, are now proved by him to be in part, at least, if not entirely, due to intestinal stasis. There can be no doubt about the mechanical changes found in the bowel, for they can be seen frequently at operations by those who have eyes to see, and what is of almost equal importance, they have been shown to be present in cases, where no operation has been performed, in

the truly wonderful X ray work of Dr. A. C. Jordan. As these changes are present there can be little doubt that some results must accrue from them, and those of us who are in general practice are quite familiar with the two types of cases described; the chronic invalid with general proptosis and continual abdominal discomfort, indigestion, and constipation; and the other type, who only suffers from a "difficulty with his bowels" or "his liver," as he prefers to call it, and who eventually develops cancer. These two types being familiar to us, are we to accept the conclusions which the author draws? That is to say, are we to prognose that the first type will develop cancer or rheumatoid arthritis in some distant organ or joint, and that the second type will get cancer locally? Or, in other words, that the person who has these changes well marked is doomed to disease sooner or later. It seems to me that this is very nearly a proved case, and that we are bound to accept the theory as a basis (for our conception) at any rate for the present, or until it can be proved by further research to be untrue. This, then, is a very serious position; certain well-known diseases of mortal importance to the sufferers, a definite anatomical cause accepted for the diseases, but no theory for the abdominal changes which are proved to exist. If these anatomical conditions of the contents of abdomen are not congenital they must be produced by some error or errors of management in childhood.

I revert now to the good lady who was so indignant with me in the out-patient department of the hospital. She insisted that the proper diet for a child was "a bit of what we have ourselves." I, in my superior wisdom, told her that the only diet for a child of 8 months was milk, which was to be continued until the child was 9 months old, and that after that time farinaceous food was to be gradually added to the milk, which was not to be decreased in quantity. Hence her contempt for me! Now in watching children grow and develop during the many years I have been in practice I have been struck with the little importance that seems to be placed on diet, so long as it is "digestible and nourishing"; these are the only two epithets ever applied to food, and what is meant by "digestible" is that there must be no overt act of indigestion, such as pain or wind. The more the child can eat of this kind of diet and the fatter it grows the more pleasure is given to the parents. The child may, and often does, require a "dose," but that is "only what all children want," and nothing is ever thought of it. An ordinary child starts the day with a breakfast consisting of bread and butter, an egg or some fish, and half pint of milk; in the middle of the morning it is given half pint of milk and some food of some sort—biscuits, rusk or bread; at from 1 to 1.30 it has a full meal of meat or fish, vegetables, and a pudding, generally a milky one; at 4.30 it has a good tea meal with jam to stimulate its jaded appetite, and half pint of milk; and at bed time it has another small meal. Altogether the child takes five meals daily, and no mother is satisfied unless it drinks at least two pints of milk in addition, and very often sweets are given as extras—I mean sweets of which sugar is the principal ingredient. All this food is of the digestible sort—i.e., all elements of it which are considered to be indigestible are carefully eliminated either by the nurse or mother. Now it must be confessed that the great majority of children pass through this period of their lives successfully, and no matter what they eat, or how much, they seem to keep well and remain free from disease. But certain of them fall by the way, and of these a good many are sufferers from dyspeptic troubles, loss of appetite, pain in the stomach, and flatulence. In many of these cases it is very easy to follow cause and effect, and if the diet, and especially the number of meals, is reduced improvement rapidly follows. A typical case is the following:—

P. A., aged 4½, was brought to me in October of last year. He had never been satisfactory; his appetite was bad, he suffered from abdominal pains, he was "anæmic," he slept badly, and was very easily tired. His bowels acted daily, but his motions were small, and sometimes there was a little "mucus" in them. He had been to many doctors, who could find nothing physically wrong, had ordered him tonics, and told his mother to feed him up. He was a bright, intelligent little fellow, very pale but not anæmic, and I could find no physical change except a distended tumid abdomen. I told his mother to stop two of his meals daily, and to substitute fruit and vegetables for most of his farinaceous food, and only to give milk as a condiment. The improvement was miraculous, and he lost all his symptoms for two months, when he suffered a slight relapse owing to constipation returning in the very cold spell of weather which we experienced in December.

Now I believe that this lad is in the early stage of abdominal change, and that he will be easily cured by the recognition of his condition. He was suffering from overfeeding and unsuitable feeding, which I believe to be the case with the majority of present-day children, and that, furthermore, it is the cause of the changes that are described.

In order to avoid the results it will be necessary to make considerable changes in the method of feeding children for the future. First of all, there must be a diminution in the number of meals, the most that may be allowed being three in the day. This allows time for one meal to be digested before another is poured into the stomach. The latter organ is thus not overfilled, and does not tend to become distended, the food is properly digested and passed on to the intestine in a fit condition for the further processes of digestion, and no overloading will take place. Then there must be great alterations of the food itself. As I have said before, all the mother asks of food at the present time is that it shall have three qualities—digestibility, nutritiousness, and quantity. No thought is taken as to the time that this diet will take in its passage through the digestive canal, and constipation is not looked upon as indigestion. It is as a rule easily corrected by a dose of medicine, and therefore of little importance. Now what is the most important acquisite of food? I unhesitatingly say its power of rapidly passing through the intestinal canal. If food passes in the proper time through these organs well and good. No matter what its quality or what its quantity no harm accrues, but if from any reason it lags by the way trouble begins. This is true stasis. Now this happens in our modern dietary, because all the laxative properties of food are carefully kept away from the child, as they are contained in that part of it which is usually called indigestible. The peels of potatoes, of apples, and other fruits, the stalks of cabbage and cauliflowers, the husks of all grain, are the necessary ingredients for stimulating the bowel to act, and they are carefully withheld from children, as they contain no nourishment and are "indigestible." Few children are allowed to eat raw fruit for the same reason, and consequently we see the results—stasis and its after-effects. Too much milk, too much straining after "nourishment," too many patent "pap" foods, are the reigning desiderata at the present time, whereas nature is quite able to pick out from even a scanty diet sufficient nourishment for the development of most children, if it is allowed to go its own way, undisturbed by tonics, digestives, and "doses."—I am, Sir, yours faithfully,

Buckingham-gate, S.W., Jan. 16th, 1921. H. A. DES VŒUX.

ORAL SEPSIS,

WITH SPECIAL REFERENCE TO CHRONIC DENTAL APICAL INFECTION.

To the Editor of THE LANCET.

SIR,—The interesting paper by Dr. W. Bertram Watson on this subject in your issue of Jan. 1st drew attention to a special feature of oral sepsis which is, in my experience, too often overlooked by dental surgeons and medical practitioners. I refer to a chronic dental infection, often round the apex of the root, where the gums and teeth are, as far as can be judged from careful macroscopical examination, perfectly healthy, and where no tenderness or pain are experienced by the patient. Too often in these cases the healthy appearance of the teeth has caused them, or rather the bony cavities containing them, to be disregarded as possible foci of serious infection without further examination. It cannot be too strongly urged that in all cases where the symptoms may be due to a

chronic septic infection of unknown origin the jaw can only be excluded as a causal factor after a careful X ray examination has been made, and this should be done however healthy the appearance of the gums and teeth. It is remarkable how frequently cases of fibrositis, arthritis, and similar chronic conditions are met with in which, though the gums and teeth appear perfectly healthy, an X ray examination discloses definite septic foci round the apices of the teeth.

At the recent pathological meeting of the Medical Society of London on Jan. 10th, Sir William Hale-White and myself referred to a case of malignant endocarditis where the source of the infection was directly traceable to a septic focus round the apex of the left lower central incisor tooth. In this case an X ray examination by Mr. C. A. Clark revealed a small abscess, though to ocular examination the gums and teeth appeared perfectly healthy. I am strongly of opinion that oral sepsis is one of the most important causes of gastric and duodenal ulcer and that the septic absorption of pathogenic streptococci often takes place through the blood stream, the gums and teeth appearing externally healthy. There is considerable experimental evidence by Rosenow and others to confirm this view. Certainly, however healthy may be the appearance of the gums, an X ray examination of the teeth should be made in every suspected case of peptic ulcer.

I am, Sir, yours faithfully,

W. H. WILLCOX.

Welbeck-street, Cavendish-square, W., Jan. 24th, 1921.

MALARIA IN THE EAST AFRICAN CAMPAIGN.

To the Editor of THE LANCET.

SIR,—Little has been published respecting the medical aspects of the campaign in East Africa, and the papers of Majors J. P. Johnson and K. Gilchrist[1] and of Majors Johnson and Gilchrist and E. Hay-Michel[2] are a welcome contribution of the greatest interest and importance. After clinical and laboratory experience in various hospitals in G.E.A. during 1916–1919 I should like to endorse many of their findings. In 1000 blood smears, most of them thick drops, I had 40 per cent. positive, of which 71 per cent., B. tertian; 26 per cent., subtertian; 3 per cent., mixed B.T. and S.T.; under 1 per cent., quartan. They made no mention of quartan infections; at Morogero I saw two cases in natives and only one case in a white man, so that possibly none were invalided to South Africa. Their figures naturally show a higher proportion of mixed infections, as these were more refractory to treatment and were therefore more liable to be invalided to South Africa. Higher dosage of quinine became the rule in the last one and a half years of the campaign, though medical officers new to the country often began with small "tonic" doses. In some hospitals a dosage of 60 gr. per diem was not uncommon. In my own cases I obtained better results with three-hourly doses of 10 gr. given as early in an attack as possible to a maximum of 30–40 gr. When an attack had been missed we endeavoured to produce mild tinnitus before the next rigor was due. In fact, the presence of tinnitus aurium was taken as a rough test of the absorption of quinine into the system.[3] In the subtertian type of infection with continued fever it is important that repeated small doses should be given throughout the night as well as the day to a maximum of 45 gr. in 24 hours. I often thought that the omission of quinine between 6 P.M. and 8 A.M. accounted for the fact that medical officers could not control these cases with oral quinine. Majors Johnson and Gilchrist rightly lay great stress on the presence of parasitological as well as of clinical relapses. Unfortunately, "bed-space" was the deciding factor in hospitals in G.E.A., and it was late in the campaign before convalescent camps (Dodoma and Nakuru) had the benefit of a laboratory. The paper is a striking demonstration of the fact that only by repeated blood examination can one judge of the effects of our treatment, a matter which has been too often disregarded in weighing the merits of different drugs and modes of administration. The relapse of 14 per cent. of previous "negatives" is not higher than one would expect. The promotion of the general powers of resistance of the body is duly appreciated by Majors Johnson and Gilchrist. During the years 1917–1918 how futile were our drugs against the effects of climate and the debility of our patients, and how striking the difference made by evacuation to Nairobi, Kijabe, and Nakuru (4000 feet).

As regards treatment with "606" I can testify to the beneficial effect in malarial cachexia and in the convalescent stage of blackwater fever. Captain D. S. Harvey, of the 15th Stationary Hospital, and later myself, used it (intramuscularly) in several cases, and Dr. R. W. Burkitt, of Nairobi, B.E.A., has elsewhere published his good results in civil cases. The action of arsenic as a stimulant to the hæmopoietic system is to cause a better type of red cell to be passed into currency, the spleen has thus less destructive work to do, gets rid of its débris and hence becomes smaller. I believe that the shrinking of the spleen is as much due to this as to any diminished activity of malarial parasites. I cannot help thinking that the effects on the liver which they ascribe to arsenic are chiefly due to the catharsis and light diet. In our V.D. section it was not unusual for an attack of malaria to occur within 48 hours after injection of "606," and in the few cases of malaria in which I tried "606" alone had eventually to be given quinine. I am, therefore, most sceptical about the parasiticidal action of arsenic in malaria. The great lesson of their paper is that chronic malaria in debilitated subjects can be overcome only by adequate quininisation, combined with general tonic measures and that constant blood examination is necessary to control the treatment.

I am, Sir, yours faithfully,

W. S. DAWSON, M.B., M.R.C.P.,
Late 15th Stationary Hospital, G.E.A.

Hanwell, Jan. 16th, 1920.

[1] THE LANCET, Jan. 15th, 1921.
[2] Brit. Med. Jour., January, 1921.
[3] Dawson: Brit. Med. Jour., May, 1920.

INSURANCE MEDICAL RECORDS.

To the Editor of THE LANCET.

SIR,—At this juncture the leading article in your issue of Jan. 8th serves a very useful purpose. Just such a reasoned and sane pronouncement is much needed, for the numerous meetings held to discuss the record cards have been marked by much unwisdom in speech and resolution. Had these proceedings taken place in camera it would have been deplorable enough, but, unfortunately, in most instances the presence of pressmen has been courted, and their reports, as presented in the various papers, partake either of the nature of political propaganda or light comedy, and do little to uphold the dignity or intelligence of the medical profession.

At the very outset of the insurance agitation years ago Mr. Lloyd George was reported to have said: "Remember, National Insurance is not merely a doctor's endowment society," and we should do well to keep this pronouncement in mind. We may take what is called "panel practice" to be the germ, or foundation, of what it is hoped will one day grow into an efficient State Medical Service. Even now panel doctors are State servants holding a Government contract with definite conditions, of which record keeping is one. As State servants we have no concern with political or other like considerations. Our duty is to loyally carry out the terms of the contract we have accepted. Undoubtedly the record cards present features open to discussion, but they are sound in principle, a step in the right direction, and a great advance on the previous card system. If we approach the health authorities in a reasonable spirit, in time improvements will doubtless be made, but there is little in the present agitation to encourage the Department to give us a patient hearing. Is it reasonable to claim that the medical any more than any other profession is entirely faultless? There are doctors who *do*, and doctors who *do not*, take their panel practice seriously, and probably for *all* of us, and certainly for the latter, it is a good thing that we should have, in the record cards, to give an account of our stewardship.

I am, Sir, yours faithfully,

Havant, Jan. 22nd, 1921. ARTHUR J. GEDGE.

PART-TIME OR WHOLE-TIME FOR THE M.O.H. AND S.M.O.

To the Editor of THE LANCET.

SIR,—The pros and cons of part- and whole-time service for the medical officer of health and the school medical officer, though much discussed, are still under discussion.

Special arguments may be put forward upon the subject. It appears that the whole-time appointments are often sought after by members of the profession who shrink from the responsibilities and competition of general and special medical and surgical practice, because of its hard work and the ever-increasing knowledge and skill required in order to be efficient. The whole-time medical officer cannot be said to be a man of the most enterprising and energetic ideals in the practice of his profession. The late Local Government Board and the present Ministry of Health argue that the whole-time medical officer of health can more efficiently perform his duties as he is not directly interested in individuals and has in consequence an open and free hand to work with, and so it has become the custom to form combinations of sanitary authorities in rural districts for the purpose of appointing a whole-time medical officer of health, and in large towns the medical officer is also appointed upon the same terms and for the same reasons. This, then, is the chief argument for these appointments, but may it not be equally argued that the medical officer, who is a part-time officer, has a greater influence upon the residents of his district, and therefore can get more reforms carried out upon an intimation notice? This is my experience after nine years as a part-time medical officer of health.

Unfortunately the whole-time medical officer in many rural districts is much handicapped by distance and, I know, cannot carry out his duties as they should be; and, again, he is much more under the thumb of his council than the part-time medical officer. He has no sound security of tenure, whereas the part-time medical officer has not got all his eggs in one basket; he, therefore, for this reason has a much freer hand for action. Alike may be said in some degree of the whole-time school medical officer. It is a matter of regret to see the young medical men only recently qualified taking up these appointments, as it shows a want of enterprise and desire to maintain an up-to-date knowledge of their profession. It appears the young medico of to-day in many cases desires to obtain a job with as little work as possible; these appointments present themselves admirably in this respect.

The school medical officer himself, though usually the medical officer of health to the county council or county borough council, does not appear to do much medical inspection himself, but hands it over to a whole string of young assistants, who may be described as "birds of passage," and in many instances he does not even know the location of the schools in his area except on paper; much less does he visit them and take his share in medical inspection. Is he above this?

Now, the assistant school medical officer cannot do a reasonable 12 months' work in the year, as he can only work about 38 weeks in the year on account of the holidays. Nor can he work more than five days a week, as Saturday is a non-school day, and he can only work four hours a day or at the most four and a half hours. He cannot start before 10 A.M. on account of "call-over" and religious instruction, and he ceases at 12 noon, two hours dinner, and commences again at 2 P.M. and ends up at 4 P.M. Much of this work is very shoddily done, and appears but to consist of examination, as is the custom in an out-patients' department of a hospital, and often is completed by the scientific diagnosis of enlarged tonsils and adenoids or of defective sight. It might be asked whether a teacher or nurse could not discover a mouth-breather and carry out "Snellen's eye test" as well as a doctor. The thousands of pounds that are to-day paid in these school medical officers' salaries out of the county and borough rates mainly, in my opinion, are not justified unless the results of the work for which they are paid are more satisfactory than appear to be generally the case.

In support of these statements, which may appear pessimistic at first sight, one has only to read the general text of the Interim Report of the Consultative Council of Medical and Allied Services of May, 1920; and it is gathered that these remarks of mine were foreseen by the members of this most excellent Council to a great extent, inasmuch as the general medical practitioner is recognised as the backbone of the profession and of the health and welfare of the country, as is especially mentioned on pages 8 and 10 of the Report:—

§ 24. The general practitioner, if adequately trained, should play a valuable part in the work of the communal services—e.g., antenatal supervision, child welfare, both before and during school age, physical culture, tuberculosis, venereal disease. He will be the first link in any chain of services to improve the conditions of industry, and to prevent any unfavourable or injurious influence upon the health of the workers.

§ 39. *Communal services.*—There would be accommodation for communal services such as those for pre-natal care, child welfare, medical inspection and treatment of school children, physical culture, examination of suspected cases of tuberculosis and occupational diseases, &c. These services should, where possible, be aggregated at the primary centre.

It may be gathered from this report that the death day of the whole-time medical officer is not far ahead and most of the work they have been doing for the past ten years or so will pass into the hands of the general practitioner.—I am, Sir, yours faithfully,

A. M. BARFORD, M.D., F.R.C.S., D.P.H.

Chichester, Jan. 24th, 1921.

SUBNORMAL WORKERS AND INDUSTRIAL FATIGUE.

To the Editor of THE LANCET.

SIR,—Among many implications of Dr. C. S. Myers's interesting lecture on Industrial Fatigue, summarised in your last issue, are those that belong to the vocations and conditions of work of men, physically or mentally injured in the war. There is a large class of these men in the country, to which for want of a better word I have applied the term "reduced" or "subnormal" workers—in the sense that they are unfit for ordinary conditions of industry. It is surely time that the guiding principles which emerge from the researches described by Dr. Myers were applied in the daily work not only of "normal" (soi-disant) but "subnormal" men. After some little study of this special category of workers, suffering from many different kinds of more or less permanent disablement, I should like to suggest three points, in confirmation or modification of Dr. Myers's conclusion.

1. Many subnormal become not simply fatigued but exhausted by work, which must, especially at first, be carefully graded to the abnormal fatigability of each individual. This is especially true after nervous shock, in which the will to work often exceeds the power, and, as Dr. Myers says, the inhibition of nervous expenditure is itself inhibited. It is very necessary to go slow with these people, and "ca' canny" not in production but in effort.

2. The importance of *variety* in work is illustrated continually. It is, for example, essential that the subnormal worker on the land must have "supplementary industries," and divide his time between the field and home work. The case of girl operatives in the boot and shoe industry is cited, where 20 minutes' rest in each hour largely increased the output. For many others a change of occupation is equally refreshing and beneficial.

3. We are told that "willingness to become an automaton" is getting rarer. Among my subnormal friends it is, I think, happily extinct. Work for them must be interesting. I asked a nerve-shocked man if he thought men like himself could and would work four hours a day. His answer was: "Certainly, provided they could look upon it as a hobby."

I am, Sir, yours faithfully,

Devonshire-place, W., Jan. 25th, 1921. R. FORTESCUE FOX.

COLITIS IN PNEUMONIA.

To the Editor of THE LANCET.

SIR,—I venture to support Sir W. Hale-White's opinion (THE LANCET, Jan. 22nd, p. 200) that acute colitis is very rare in lobar pneumonia by my own experience of one example only in 558 consecutive cases. I regret that I have no details now to hand of the intestinal symptoms beyond the facts that they appeared during the patient's treatment in hospital and that recovery took place. In three of my cases gastro-intestinal disturbance of some kind or other was the presenting symptom, and with Sir W. Hale-White's letter before me I am vividly reminded of one of these, a man aged 38, who upon the usual interrogation at his admission into the ward said: "For two days I have been suffering with the bloody flux." (He was, I think, a student of old English literature.) This patient had a temperature of 103·6° F. without physical signs of any description beyond the passage of comparatively fresh blood by the bowel. I confess that the possibility of pneumonia did not occur to me, but, exactly as in Sir W. Hale-White's case, within a short time unequivocal signs of consolidation with rusty sputum developed.

Sir W. Hale-White's letter was prompted by an article in your issue of Jan. 15th by Dr. E. Cronin Lowe upon three cases of influenzal pneumonia. In this Dr. Lowe refers to a publication by my colleagues, Dr. Herbert French and Dr. N. F. Hallows, and myself, and says that although we mention the normality of the appendix and bowel generally in our autopsies we do not definitely state whether the bowel was examined in detail throughout. We mentioned the appendix specifically in view of the statements that had appeared that there was a tendency for influenzo-pneumonic patients to develop acute appendicitis and so to emphasise that such was not the case in our experience. As for the alimentary canal as a whole we were satisfied to state that it exhibited no particular change, and I may now add that the whole length was examined critically by Dr. French, which is a guarantee of thorough investigation and of accurate pathological interpretation, in a large proportion of our earlier autopsies, a procedure subsequently neglected in view of the persistently negative findings. This, of course, does not eliminate the possibility of cases with ulceration or necrosis of the bowel having actually occurred and which would have been detected if systematically investigated for, as Dr. Lowe says, the peritoneum gives no evidence of such inflammatory change in the bowel itself. But when one recalls the remarkable seasonal and local peculiarities exhibited by crops of influenzo-septicæmic cases I think it more likely that Dr. Lowe's cases were of a special type.—I am, Sir, yours faithfully,

ADOLPHE ABRAHAMS.

Park-crescent, Portland-place, W., Jan. 25th, 1921.

BILHARZIA-INFESTED SNAILS AND THEIR EMPLOYMENT AS ANTIGEN.

To the Editor of THE LANCET.

SIR,—Although the dams along the course of the rivers of Natal and the many stagnant pools that are produced by the floods swarm with fresh-water snails and other evidences of stream-pollution, the collecting of sufficient numbers of the various species which harbour parasites requires much patient search, and a great deal of success depends upon the state of the weather and wind. At this season of the year about 1 in 6 *Physopsis africana* are infested with schistosomes. Only a small proportion of infested specimens harbour the parasite which causes bilharzia disease in man, a greater number being infested with cercariæ which develop into *Schistosoma bovis*. I have found schistosomes developing in *Isidora tropica*, *Isidora forskali*, *Isidora schackoi jickeli*, *Physopsis africana*, *Limnæa natalensis*, and *Planorbis pfeifferi*, but have not yet secured the adult forms of any besides *S. hæmatobium* and *S. bovis*.

Dr. W. A. Murray has prepared a very efficient antigen from the livers of *Physopsis africana*, which harbour these schistosomes. This has involved the dissection of a large number of specimens; for at least 15 gr. of infested liver-substance is needed in the preparation of the antigen for the complement-fixation test. But livers harbouring the cercariæ of *S. bovis* appear to be just as useful as those infested with the cercariæ of *S. hæmatobium*. Besides giving a positive reaction in patients who harbour the more common bilharzia parasites, the test has given a positive reaction in a patient from China, whose fæces contain the typical unspined eggs of *S. japonicum*. This blood-test, introduced by Dr. Hamilton Fairley, promises to be of even greater value in the diagnosis of *Schistosomum bovis*. The spindle-shaped eggs that I have seen in guinea-pigs experimentally infested with this parasite are on an average 0·175 by 0·04375 mm. in diameter. These parasites do not appear to cause as much bleeding as is common in persons infested with *S. hæmatobium*, and the diagnosis of their presence in cattle and the effect of appropriate treatment will be decided very largely by the reaction of the serums to the antigen test.

On Oct. 19th I asked Dr. Murray to apply the test to the serums of seven sheep that are known to harbour liver-flukes and are now undergoing a course of injections for this complaint; a positive reaction was obtained in each case. An antigen prepared from fresh-water snails infested with schistosomes may, therefore, be used in the diagnosis of bilharzia and fasciola disease in man and beast.

I am, Sir, yours faithfully,

F. G. CAWSTON, M.D. Cantab.,
First Streatfeild Research Scholar.

Durban, S. Africa, Nov. 15th, 1920.

A SIMPLE METHOD OF GROWING THE ACNE BACILLUS.

To the Editor of THE LANCET.

SIR,—Having experienced some difficulty in separating the acne bacillus from the staphylococci which usually accompany it in comedoes and acne lesions by such methods as are known to me, the following procedure has been found to afford an easy means of effecting the separation and of growing the bacillus without trouble.

The medium consists of ordinary peptone broth to which is added 1 per cent. of oleic acid and 1 per cent. of glucose. About 10 c.cm. of the medium is distributed in each tube, and a layer of melted vaseline is run on the surface of the broth. The tubes are then sterilised. A suspension of a comedo crushed in a little normal salt is introduced with a pipette into the medium. The opening thus made in the vaseline is sealed by the application of heat so as to render the cultures anaerobic. After incubating the inoculated tube at 37° C. for four days large numbers of acne bacilli will be found to be present. At this date, in such an environment, the acne bacilli usually outnumber the staphylococci, the growth of which appears to be restrained, and a pure culture is readily obtainable in the usual manner. By concentration of the growth by centrifugalisation from a number of such anaerobic cultures acne bacilli can be obtained in considerable quantities.

I am, Sir, yours faithfully,

W. E. DE KORTÉ, M.B. Lond.

Cape Town, Nov. 17th, 1920.

MITES AS INTERNAL PARASITES IN MAN.

To the Editor of THE LANCET.

SIR,—*Re* the occurrence of mites as internal parasites in man, discussed at the last meeting of the Medical Society of London and reported in THE LANCET of Jan. 22nd (p. 175), it is interesting to note an article by Mr. R. J. Pye-Smith[1] in which it is stated that he drew off in July, 1899, fluid from a testicular cyst of a patient who some years previously had spent a short time in India, and whilst there had been catheterised for retention of urine in an attack of fever. This fluid was examined by Dr. C. Munro Hector, who found numerous living acari, shed skins, and ova. Unable to identify them, Dr. Hector consulted Mr. A. Denny, F.L.S., who

[1] Quarterly Medical Journal, August, 1902, p. 323.

advised him to send the specimen to Mr. A. D. Michael, F.Z.S., then the foremost British authority on acari. Mr. Michael was too busy to undertake this investigation, which he passed on to Dr. E. Trouessart, of Paris, who published the result.[2] Dr. Trouessart wrote:—

"I was convinced that it was a sarcoptide, of the sub-family Tyrogliphinæ (*Sarcoptides detriticoles*), nearly related to the *Histiogaster carpio*, Kramer, but a new variety, which I propose to call *Histiogaster spermaticus*, to recall the exceptional circumstances under which this species has been discovered."

Trouessart was surprised to find a species new to him, and concluded that it belonged to the fauna of India and had been introduced at the catheterisation mentioned above. The male and female are both illustrated in Trouessart's account, and this illustration is copied in Pye-Smith's account.

I am, Sir, yours faithfully,

Buxton, Derbyshire, Jan. 21st, 1921. C. SUFFERN.

TABES: ITS EARLY RECOGNITION.

To the Editor of THE LANCET.

SIR,—The letters of Dr. E. F. Buzzard and Dr. E. T. Burke show that I have failed to make the first premise of my argument clear. That argument amounts to: A syphilitic starts treatment while the blood is still negative; he receives 2·6 gr. of "606" and 8 g. of mercury; the disease is eradicated. I have asked for any rare exceptions to the rule to be accurately defined, where the above propositions have been indubitably fulfilled. The first of these two conditions upon which I base my conclusion does not include all cases of primary syphilis, as we know it clinically—far from it. Let us call them Class A. In July, 1919, I checked the case cards of 400 consecutive cases. Actually less than one-third could be placed in Class A. The other much larger class amply accounts for the sad sequence of events emphasised by Dr. Buzzard and Dr. Burke, and as far as that unfortunate class is concerned I naturally agree with all that they have said.

I am, Sir, yours faithfully,

Leicester, Jan. 23rd, 1921. JOHN DONALD.

THE TREATMENT OF PAUPER LUNATICS.

To the Editor of THE LANCET.

SIR,—In this week's issue of the *Medical Press and Circular* appears the first of three articles headed Asylum and Lunacy Law Reform. It is with regret one reads the statements made, in a paper presumably edited by a medical man—e.g., "In these wards (asylum) and airing courts one sees a motley group of lunatics ..... indiscriminately herded together without any attempt at classification and segregation ..... living together in the closest contact and intimacy under the care of male and female attendants, themselves ill-trained, underpaid, and underfed, and for the most part callous and indifferent to the welfare of those of whom they are in charge." Again, "the patients are deprived of their own clothes, clad in a distinctive and humiliating garb, ill-shod, unkempt, often insufficiently protected against the weather, fed on monotonous, innutritious, badly cooked, and repulsively served food," and so on in the same strain.

The writer evidently has not read the reports of the Commissioners of the Board of Control, nor is he aware of the careful and advanced training undergone by male and female mental nurses, necessary to obtain the nursing certificate of the Medico-Psychological Association. These statements may be copied by the lay press and obtain a certain amount of credence by persons as ignorant as the writer of the actual conditions which exist in county mental hospitals, both as regards the treatment of mental cases and the administration of such institutions.

I am, Sir, yours faithfully,

J. B. TIGHE,

Medical Superintendent, Gateshead County Borough Mental Hospital, Stannington, Northumberland.

Jan. 21st, 1921.

[2] Archives de Parasitologie, vol. iii., pp. 448-459.

TUBERCULOUS MILK.

To the Editor of THE LANCET.

SIR,—Recent correspondence in the professional journals has revealed considerable diversity of opinion regarding the infectivity of bovine tuberculosis to man. At the last meeting of the council of the Society of Medical Officers of Health representations on the subject were received from the Tuberculosis Group and individual members of the society, and the following resolutions were adopted unanimously:—

(*a*) That in the opinion of this society it has been conclusively proved that bovine tuberculosis is transmissible to children through the ingestion of infected milk.

(*b*) That this society regards the evidence of immunisation by the ingestion of living tubercle bacilli in milk as entirely unproved.

I was directed to forward you a copy of these resolutions for the information of your readers.

I am, Sir, yours faithfully,

G. S. ELLISTON,

Executive Secretary, Society of Medical Officers of Health. 1, Upper Montague-street, W.C., Jan. 22nd 1921.

THE CRIPPLING DISABILITIES OF CHILDREN.

To the Editor of THE LANCET.

SIR,—In Mr. G. R. Girdlestone's scheme (THE LANCET, Jan. 8th, p. 74) for thorough treatment of crippled children there is an additional advantage which he leaves unmentioned. A nation-wide series of orthopædic hospitals, with staffs experienced in the best treatment of all sorts of deformities, with methods and appliances constantly improving, will provide from the beginning of the next war many surgeons and many asylums to care for disabled soldiers to the very best advantage, so that the largest proportion possible may come back to industrial efficiency. We have been able to get much done in this war, more than we could have believed, but it took time before this work was given to the orthopædic surgeons, before they had shown us how useful to the wounded their specialty could be. That time will be saved to the wounded in the next war if Mr. Girdlestone's proposals become effective.

I am, Sir, yours faithfully,

Jan. 22nd, 1921. MILES.

Obituary.

RUPERT FARRANT, *M.C.*, F.R.C.S.ENG.

THE tragic death, at the early age of 37, of Mr. Rupert Farrant, until recently assistant surgeon and lecturer in practical surgery and endocrinology at Westminster Hospital, has been widely reported in the press. The youngest son of the late Mr. Samuel Farrant, of Taunton, Somerset, Rupert Farrant had a distinguished career as a student at Westminster and St. Bartholomew's Medical Schools. He qualified M.R.C.S.Eng., L.R.C.P. Lond., in 1906, becoming F.R.C.S. in 1909. Mr. Farrant made a special study of the influence of the thyroid gland on general metabolism, and it was on this subject that he delivered lectures at the Royal College of Surgeons of England as Hunterian Professor on two occasions. The name of Rupert Farrant must be added to the not inconsiderable list of distinguished officers who broke down after the strain of arduous war service, often, as in his case, after having received a decoration testifying to especial gallantry.

ROYAL CORNWALL INFIRMARY, TRURO. — The annual meeting of the subscribers of the Royal Cornwall Infirmary was held recently. The accounts showed a considerable deficiency, and it was resolved that every patient who could do so should make a contribution towards the cost of maintenance. £15,000 are required for the building and renovation of the institution, and towards this sum £10,000 have already been raised.

Medical News.

UNIVERSITY OF OXFORD: LECTURES IN CLINICAL MEDICINE AND SURGERY.—Sir Archibald Garrod, the Regius professor of medicine, is conducting a course of clinical lectures on Tuesdays, at 2.30 P.M., at the Radcliffe Infirmary. Clinical lectures are also being given by Dr. W. Collier, the Litchfield lecturer in medicine, and by Mr. A. P. Dodds-Parker, the Litchfield lecturer in surgery.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following Hunterian lectures will be delivered in the theatre of the College at 5 P.M. On Monday, Jan. 31st, Professor W. Sampson Handley will lecture on the Pathology and Surgery of Lupus. On Wednesday, Feb. 2nd, Professor Walter G. Howarth will lecture on Mucocele and Pyocele of the Nasal Accessory Sinuses. On Friday, Feb. 4th, Professor C. W. Gordon Bryan will lecture on Injuries of the Diaphragm, with Special Reference to Wounds Jointly Involving Thoracic and Abdominal Viscera.

FEDERATION OF MEDICAL AND ALLIED SOCIETIES.—At a meeting of the Executive Council, held at 11, Chandos-street, London, W., on Jan. 25th, the following societies were elected to membership of the Federation: The Harrogate Medical Society, the Infirmary Medical Superintendents' Society, and the Chartered Society of Massage and Medical Gymnastics.

ROYAL SANITARY INSTITUTE.—An introductory lecture to students attending the several courses of instruction at this institute, 90, Buckingham Palace-road, London, S.W., will be given by Professor H. R. Kenwood on Jan. 31st at 5.30 P.M.

A DINNER "to celebrate the admission of women to the Chemical Society" will be held at the Lyceum Club under the auspices of its University Board on Monday, Jan. 31st, at 8 P.M. Dr. Smedley Maclean will preside.

ROYAL LONDON OPHTHALMIC HOSPITAL.—The annual dinner of past and present students will be held at the Café Royal, Regent-street, on Thursday, Feb. 10th, at 7 for 7.30 o'clock. The chairman will be Mr. J. B. Lawford, consulting surgeon to the hospital. Tickets, at 15s. (excluding wine), should be obtained as soon as possible from Mr. Charles Goulden, 42, Welbeck-street, London, W.1.

ONODI COLLECTION OF NASAL ANATOMY.—As has been announced in THE LANCET the gift of the Onodi Committee of the valuable collection of nasal anatomy has been accepted by the Royal College of Surgeons of England. The College have undertaken to mount and catalogue the specimens, and when completed will present a copy of the catalogue to each subscriber. The following is the list of subscribers up to date:—

	£	s.	d.
Hon. Staff, Central London Ear, Nose, and Throat Hospital	52	10	0
Hon. Staff, Throat Hospital, Golden-square	26	5	0
Sir William Milligan	20	0	0
Sir James Dundas-Grant, Sir StClair Thomson ... each	10	10	0
Mr. T. Mark Hovell, Mr. A. Logan Turner ... each	10	0	0
Sir John Bland-Sutton, Mr. H. Tyrrell Gray, Mr. W. Douglas Harmer, Mr. Somerville Hastings, Mr. W. G. Howarth, Dr. A. Brown Kelly, Sir H. Bell Longhurst, Mr. W. M. Mollison, Mr. Norman Patterson, Mr. F. A. Rose each	5	5	0
Mr. A. J. Hutchison, Dr. H. Lambert Lack, Dr. D. R. Paterson, Mr. W. Thelwall Thomas, Mr. Herbert Tilley ... each	5	0	0
Sir Charles Ballance, Mr. E. D. Davis, Dr. G. William Hill, Dr. W. Jobson Horne, Dr. A. L. Macleod, Mr. Herbert J. Marriage, Mr. J. F. O'Malley, Mr. C. A. Parker, Sir Charles Ryall, Mr. W. G. Spencer, Mr. G. Wilkinson ... each	3	3	0
Mr. Charles J. Heath, Mr. E. A. Peters ... each	3	0	0
Dr. George Cathcart, Mr. Ernest Clarke, Mr. E. Treacher Collins, Sir Frank Colyer, Sir Anderson Critchett, Mr. W. H. Dolamore, Dr. John Eyre, Mr. Philip Franklin, Dr. Albert A. Gray, Mr. T. Guthrie, Sir William Arbuthnot Lane, Mr. W. H. MacMullen, Dr. Robert P. Mathers, Dr. Morgan, Mr. Ransom Pickard, Sir Harold Stiles, Dr. W. S. Syme, Dr. James Taylor, Mr. H. Watson Turner, Mr. H. J. Waring, Dr. P. Watson-Williams, Mr. C. Ernest West, Sir G. Sims Woodhead ... each	2	2	0
Mr. William Appleyard, Mr. J. H. Badcock, Mr. Russell Barrett, Dr. H. O. Dickin, Dr. Wilfred Glegg, Dr. W. Ainslie Hollis, Dr. Peter Macdonald, Dr. Henry Peterkin, Sir D'Arcy Power, Mr. R. P. Rowlands, Dr. V. R. Sanzgiri, Dr. Henry Smurthwaite, Mr. George E. Waugh ... each	1	1	0
Mr. Thomas Rogers, Mr. William Rushton ... each	1	0	0
Mr. Andrew Ellis Wynter	0	10	0
Dr. George Jones	0	5	0

Mr. Philip Franklin, 27, Wimpole-street, is acting as honorary secretary and treasurer of the movement.

ROYAL INSTITUTION OF GREAT BRITAIN.—The Friday Evening Discourse on Feb. 4th will be delivered at 9 o'clock by Professor A. D. Waller, F.R.S., on the Electrical Expression of Human Emotion.

UNIVERSITY OF VIENNA.—The Dean of the Medical Faculty announces a concentrated post-graduate course to be held from Feb. 7th to 19th. Lectures and demonstrations will be given from 9 to 12 and from 2 to 6 daily. Cardiac Conditions will form the subject dealt with on Feb. 7th and 8th, and will be discussed by Professor K. F. Wenckebach, Professor H. Winterberg, Professor H. Eppinger, Hofrat Professor Jakob Pal, Regierungsrat Professor M. Sternberg, Professor O. Stoerk, and Professor H. H. Meyer. Foreign medical men are invited to apply to the Publisher of the *Wiener Medizinischen Wochenschrift*, 22, Porzellangasse, Vienna IX., for further information. The fee for the course is 1000 kronen for foreigners. Further courses will be held in June, September, and December, 1921.

THE COLLEGE OF NURSING.—A few months ago it was announced that Viscount and Viscountess Cowdray had purchased 20, Cavendish-square, W., and presented it to the College of Nursing for its headquarters, and for a residential club for College members. A 999 years' lease has since been acquired from the Howard de Walden Estate. The Council of the College now recommends that the house shall be exclusively used as a club, and that the garden, having a frontage to Henrietta-street, shall be utilised as a site for the College. To give effect to this recommendation, Viscountess Cowdray has advised the Council that the gift will be increased to a total of £100,000. The conversion of the mansion into the club house will be taken in hand forthwith, and should be completed by midsummer. It is proposed to delay the erection of the College until building operations become cheaper. The College will contain offices, class-rooms, laboratories, lecture halls, &c., while the upper floors will provide over 50 bedrooms, having direct access to the club, which will be named the Cowdray Club.

STUDENTS' MEDICAL SOCIETIES.—We have received the following announcements of forthcoming meetings of medical societies attached to certain metropolitan medical schools:—

Charing Cross Hospital Medical Society.—At the meeting on Feb. 1st Mr. S. Fenwick will speak on Shooting. On Feb. 15th a paper on the Evolution of Some Descriptive Terms will be read by Professor E. Barclay-Smith. On March 1st Sir Frank Colyer will speak on the Comparative Anatomy of the Teeth. The meetings are held at 5 P.M.

King's College Hospital, Listerian Society.—The next meeting will be held on Feb. 2nd, when Dr. G. A. Harrison will read a paper on Functional Albuminuria. On Feb. 16th the Rev. K. E. D. Dauncey will speak on God and Disease, and on March 2nd Mr. G. de M. Rudolf on Animal Mythology of the Middle Ages. On March 16th a clinical evening will end this session's meetings, which are held at 8.15 P.M.

London Hospital Medical Society.—On Feb. 10th Dr. W. J. O'Donovan will speak on Alopecia. On Feb. 24th Dr. G. E. Vilvandré will read a paper on the X Ray Diagnosis of Some Gastric Diseases, and on March 10th Mr. Eardley Holland will speak. On March 17th Mr. W. S. Perrin will read a paper on Intussusception. The meetings begin at 8 P.M.

Middlesex Hospital Medical Society.—The next meeting will be held on Feb. 10th, when Mr. C. H. S. Webb will describe four cases. On Feb. 24th Dr. E. A. Cockayne will speak on Hermaphrodites and Intersexes in Insects, and Mr. W. N. Kingsbury will read a paper. On March 10th Dr. Tuck, D.Sc., will speak on "The Relationship between Chemical Constitution and Physiological Action," and Mr. C. P. Wilson will read a paper. Cases of clinical interest or pathological specimens are demonstrated at all meetings, which are held at 5.15 P.M.

St. Mary's Hospital Medical Society.—The next meeting will be held on Feb. 9th, when Sir Thomas Horder will speak on Doctors in the Making. On Feb. 23rd Sir Humphry Rolleston will speak on Diseases Described by their Medical Victims. On March 9th Professor Parsons will read a paper on the Skull of Modern Englishmen; and on March 16th Mr. W. Clayton-Greene will read a paper. The meetings are held at 8 P.M.

University College Hospital Medical Society.—The annual dance will be held on Feb. 7th (tickets at 15s. obtainable from Mr. W. G. Spencer-Cox, honorary secretary). On Feb. 9th Mr. Herbert Tilley will read a paper on Some Experiences. On March 9th Dr. C. Price-Jones will speak on Blood Pictures. On May 11th Dr. T. R. Elliott will read a paper on Gas Poisoning, and on June 8th Mr. Wilfrid Trotter will speak on Minor Injuries of the Brain. Clinical evenings will be held on Feb. 28th, March 21st, and May 23rd, at 8 P.M. Ordinary meetings are held at 8.15 P.M.

UNIVERSITY OF ABERDEEN.—At a special meeting of the University Court, held on Jan. 18th, it was agreed to be desirable that so far as possible the increase of fees in the Scottish universities should be uniform, and it was resolved to increase the inclusive fees in all the faculties. The scales of increase to be adopted were referred to a committee for consideration. The Court resolved that any increase of fees should not apply to students who had already commenced university courses prior to intimation being made by the University Court of the increase of fees.

PUBLIC HEALTH CONFERENCE IN ABERDEEN.—The Scottish Board of Health having asked various bodies to meet with Dr. J. C. McVail, one of the Board of Health officials, and Mr. Fraser, the secretary, a conference was held in the Aberdeen Town House on Jan. 19th. Councillor Doig, convener of the Public Health Committee of the Town Council, presided, and there were also present: Principal Sir George Adam Smith, Dr. J. Crombie, of Parkhill, and Major H. J. Butchart, D.S.O., secretary of the University, representing the University; Mr. D. M. M. Milligan, advocate, representing the Sick Children's Hospital; Mr. John Ellis and Mr. A. Scott Finnie, clerk and treasurer, representing the Aberdeen Royal Infirmary; and Professor Ashley W. Mackintosh and Dr. Lawson, representing the joint hospital scheme. Dr. J. Parlane Kirloch, deputy M.O.H., and Dr. George S. Banks, assistant medical officer for the city of Aberdeen, were also present. A general discussion took place on questions such as sanatorium benefit, the need for economy, and proposals in connexion with the proposed joint hospital scheme for Aberdeen. The views expressed will be reported to the various bodies by their representatives.

SCHEME OF MEDICAL SERVICE FOR SCOTLAND: A PROTEST.—The Medical Guild has issued a memorandum protesting against the scheme of medical service for Scotland put forward in the interim report of the Consultative Council on Medical and Allied Services, and especially to the proposal to extend National Health Insurance to dependents. In a circular letter addressed to members of the profession in Scotland signed by the President of the Medical Guild, Emeritus Professor F. M. Caird, and its honorary secretary, Dr. Frederick Porter, the recommendations in the interim report are summarised, and the report is described as an audacious attempt to foist upon the people an aggressively inquisitorial system. The letter continues: "The profession and the public can now see clearly what certain politicians have been aiming at ever since the passing of the Insurance Act—namely, the subordination of individual members of the profession to the will of an autocratic body, and the invasion of the privacy of family life by State officials." Recipients of the letter and memorandum are asked to state on a post-card whether they approve of the views expressed, or whether they approve of the proposed extension of National Health Insurance. It is added that their replies will be treated as confidential.

SURGICAL AID SOCIETY: PORTSMOUTH BRANCH.—The annual report, which was presented at a meeting held in the town hall on Jan. 20th, stated that 1069 surgical appliances had been supplied during the year. The subscriptions, with interest, amounted to £1269 8*s.* 11*d.*, as compared with £945 1*s.* 4*d.* in the preceding year. There was an excess of £331 13*s.* 10*d.* in expenditure over income which had been paid by the parent society. The Portsmouth branch is the second largest branch in the country.

UNIVERSITY OF MANCHESTER.—At the last meeting by the Council and Senate a resolution was passed expressing the deep regret of the Council and Senate at the resignation by Sir William Thorburn of his position as senior honorary surgeon to the Manchester Royal Infirmary, which involves also his resignation of the Chair of Clinical Surgery in the University. The Council and Senate expressed their high appreciation of his great services to the University, of his contributions to the advancement of surgery, and of his distinguished record and skill in the practice of his profession. The resolution further called attention to the devotion which he had brought to the administrative side of his University work, and the geniality and consideration with which he had treated his colleagues.

The total number of students attending the University during 1920–21 is 2788, as compared with 2549 in 1919–20, 1036 in 1918–19, and 871 in 1917–18. The numbers of new students admitted this session are 548 men and 201 women; last session the corresponding numbers were 941 and 188. 154 of these students come from countries other than England—21 from Egypt, 18 from India, and 10 from South Africa. Serbia has sent 5 students, Australia, Bulgaria, Palestine, Siam, U.S.A., and Switzerland 2 each.

The University prize in medicine has been awarded to Mr. L. J. Witts.

THE INCREASED COST OF DRUGS.—At the last meeting of the Truro (Cornwall) Board of Guardians a district medical officer applied for an increase of salary, and owing to the increased cost of drugs he asked the guardians in future to defray the cost of the drug bill. The guardians agreed to this proposition.

SANATORIUM FOR TUBERCULOSIS IN SOMERSET.—The Somerset County Council has purchased Quantock Lodge, which is to be adapted for the treatment of tuberculosis. The cost of the scheme will be £55,600. The more expensive scheme of erecting an institution at Lyncombe Hill has been abandoned.

BRITISH COMMITTEE FOR AIDING MEN OF LETTERS AND SCIENCE IN RUSSIA.—At the beginning of this year an appeal was published in THE LANCET (Jan. 8th), for funds to enable a certain number of scientific and literary publications to be sent to the House of Science and House of Literature in Petrograd, where the remnant of the intellectual life of Russia is mostly congregated. The British Committee for Aiding Men of Letters and Science in that country has assured itself that such publications will reach their destination, and has made arrangements for their transmission. There are probably many authors who would be willing to send copies of their works in the form of excerpts or otherwise to Russian workers who have been cut off from the outside world since the revolution. The British Committee will be glad to receive any such books or papers of a non-political type, and to send them to Petrograd. It cannot guarantee delivery to individuals, but it can ensure that publications will reach the Houses of Literature and Science. Parcels for transmission should be addressed to the Committee, care of Wm. Dawson and Sons, Ltd., Continental Dept., Rolls Building, Fetter-lane, E.C. Mr. L. F. Schuster is acting as secretary to the movement, and he may be addressed at the British Science Guild Offices, 6, John-street, Adelphi, London, W.C. 2.

ST. BRENDA'S PRIVATE HOSPITAL, BRISTOL.—This new hospital has recently been opened. It is situated in a pleasant and accessible neighbourhood near Clifton Down, and consists of two houses, which have been turned into one and adapted so as to furnish a hospital of about 40 beds, with small wards. The objects of the hospital are (*a*) to provide a private hospital where scientific investigation and treatment of disease may be obtained by those whose circumstances render this impossible save by admission to a charitable institution; and (*b*) to coöperate closely with the patient's own medical attendant. Under no circumstances will patients be admitted without letters of recommendation from their own medical attendants, who will be invited to assist in various ways in the care of the cases. The staff consists of two physicians, two surgeons, one gynæcologist, one ophthalmic surgeon, one rhinologist, one dermatologist, two anæsthetists, one skiagraphist, and one pathologist. All are members of the assistant staffs of the Royal Infirmary and General Hospital. The tariff of fees includes ordinary charges for maintenance and for medical attendance, and special charges for operations, for special investigations, and for confinements, and lie between the small sums now being collected by some of the voluntary hospitals and the larger fees paid by patients in the average nursing home.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—At a meeting held on Jan. 6th Dr. Donald Hall showed a woman of 38 years, the subject of Left-sided Artificial Pneumothorax induced 12 months before for advanced pulmonary tuberculosis. She was doing well. Mr. H. F. Seymour read notes of a case of Wrist-drop treated by tendon transplantation. The patient, a woman of 45, had cut her left arm with glass, severing the posterior interosseous nerve, and when seen by him six months after the injury had complete paralysis and wasting of the corresponding muscles. He decided against nerve suture on account of the density of the scar tissue and the smallness of the posterior interosseous nerve, and transplanted the flexor carpi radialis obliquely into the extensor communis digitorum. The result had been excellent, within six weeks movements being very nearly normal except for highly skilled tasks such as piano playing. Mr. C. H. Bryant read a paper on the Effects of Errors of Refraction. He spoke of the three types of eye-fatigue: retinal, muscular, and mental. The sensitiveness of the individual was the chief determining factor in the production of symptoms rather than the amount of the defect. Mr. Bryant then discussed in some detail the pathology and symptoms of myopia, hypermetropia, and astigmatism. In astigmatics he considered that when symptoms supervened they were usually attributable to the mental strain of interpreting an indistinct picture. Dr. J. F. Gordon Dill addressed the meeting on the scheme of voluntary hospital insurance inaugurated by him.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lieuts. J. D. Bangay and L. F. Strugnell to be Surgeon Lieutenant-Commanders.

ARMY MEDICAL SERVICE.

Col. J. R. McMunn vacates the temporary appointment of Assistant Director-General.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Col. J. Hennessy is placed on the half-pay list on account of ill-health.

Majors J. B. Meldon and R. B. Hole, and Capt. R. C. Robertson retire, receiving a gratuity.

Capt. J. E. Dunbar is restored to the establishment.

Temp. Capt. H. N. Webber relinquishes the acting rank of Major.

W. A. Byrn to be temporary Lieutenant.

Officers relinquishing their commissions:—Capt. H. C. Gilmore (retains the rank of Captain). Temporary Captains retaining the rank of Captain: J. N. Deacon and P. Templeton. Temp. Lieut. T. B. Bokenham (retains the rank of Lieutenant).

SPECIAL RESERVE OF OFFICERS.

Capt. C. H. Carlton relinquishes his commission on appointment to the R.A.M.C. (T.F.).

TERRITORIAL FORCE.

Lieut.-Col. C. S. Brebner resigns his commission and retains the rank of Lieutenant-Colonel.

Major J. B. Scott (late R.A.M.C., S.R.) to be Captain and to relinquish the rank of Major.

Capt. L. Ball to be Major.

Capt. E. F. Skinner (late R.A.M.C., T.F.) to be Captain.

Capt. J. Dale resigns his commission and is granted the rank of Major.

ROYAL AIR FORCE.

Capts. J. Fanning and J. P. Hosford are transferred to the Unemployed List.

INDIAN MEDICAL SERVICE.

The King has approved of the retirement of Col. T. Stodart.

DEATHS IN THE SERVICES.

Lieut.-Col. Henry Peers Dimmock, I.M.S. (retired), on Jan. 23rd, at his residence at Sydenham. He joined the Service in 1880 and was attached to the 2nd Baluch Regiment. While civil surgeon at Shikarpur he observed that the excessive gaol mortality in the prisons of Northern India was due to epidemic cerebro-spinal fever. The complaint was then more closely investigated and there was substantial reduction of prison mortality. In 1891 he was appointed obstetric physician at the Jamsetjee Jeejeebhoy Hospital and professor of midwifery at Grant Medical College, subsequently principal of the college, and senior medical officer of the hospital. In 1897-98 he was appointed medical member of the Executive Plague Committee.

Appointments.

CATES, J., M.D. Lond., D.P.H. Camb., has been appointed County Medical Officer of Health for Surrey.

DAVIDSON, M., M.A., M.D. Oxon., Assistant Physician to the Brompton Hospital for Consumption and Diseases of the Chest.

EAST, A. G., M.B., B.Ch. Oxf., Honorary Ophthalmic Surgeon to the Royal Cornwall Infirmary, Truro.

REES, H. W. M., M.R.C.S., L.R.C.P., Medical Superintendent of the Training Centre for Out-door Occupations for Tuberculous ex-Service Men, Maidstone.

WALFORD, H. R. S., M.R.C.S., L.R.C.P., Senior Assistant Physician to Union of South Africa Mental Hospital Service.

WHITEWAY-WILKINSON, A. C. S., L.R.C.P., M.R.C.S., District Medical Officer and Public Vaccinator for Kingsteignton.

WILLWAY, C. V. D., M.B., Ch.B. Edin., Surgeon to Stroud Hospital.

Surgeons under the Factory and Workshop Acts: MACAULAY, J. G. M., L.R.C.P. & S. Edin., L.F.P.S. Glasg. (Inverary); RYAN, R. A., L.R.C.P. & S. Irel. (Ripley); DAVEY, S., L.R.C.P., M.R.C.S. Eng. (Caterham); EVANS, R. D., L.R.C.P. & S. Edin., L.F.P.S. Glasg. (Festiniog); PATERSON, W. L., L.R.C.P. & S. Edin., L.F.P.S. Glasg. (Kirkwall); TAYLOR, J. (Keith).

Vacancies.

For further information refer to the advertisement columns.

Altrincham General Hospital, Cheshire.—H.S. £175.

Birkenhead and Wirral Children's Hospital, Woodchurch-road.—H.S. £150.

Birmingham General Hospital.—Res. Anæsth., Two H.P.'s, H.S.'s. £100. Also H.S. to Special Depts. £125.

Birmingham Municipal Anti-tuberculosis Centre.—Asst. Tuberc. O. £800.

Birmingham Orthopædic Centre, Highbury, Ufculme, Sorrento Hospitals.—Medical Superintendent. £800.

Brighton Borough Sanatorium.—Res. M.O. £350.

Bristol General Hospital.—Sen. Res. M.O. £300.

Bristol Royal Infirmary.—Locum Sen. Res. O. £5 5s. per wk.

Bury St. Edmunds, West Suffolk General Hospital.—Res. H.S. £200.

Cambridgeshire County Council.—Tuberc. O. £650.

Canning Town Women's Settlement Hospital, Balaam-street, Plaistow, E.—Female Hon. Ophth. S.

Canterbury, Kent and Canterbury Hospital.—Res. M.O. £175.

Central London Ophthalmic Hospital, Judd-street, W.C.—Hon. P.

Chelmsford, Brentwood Mental Hospital.—Med. Supt. £1000.

Chelsea Hospital for Women, Arthur-street, Chelsea, S.W.—Path. £40.

Croydon County Borough.—Asst. Tuberc. M.O.H. £650. Also Med. Res. Supt., Sanatorium, North Cheam. £500.

Dorchester, Dorset Mental Hospital, Herrison.—Sec. Asst. M.O. £400.

Dreadnought Hospital, Greenwich.—H.P. and H.S. £150.

Federated Malay States Colonial Service.—Pathologist to the Medical Research Institute. £1050.

Great Yarmouth Hospital.—H.S. £250.

Hampstead General and North-West London Hospital, Haverstock Hill, N.W.—Hon. Dent. S.

Hôpital and Dispensaire Français, 171, Shaftesbury-avenue, W.C.—P. to Out-patients.

Hospital for Sick Children, Great Ormond-street, W.C.—Ophth. S.

Hull Royal Infirmary.—Asst. H.S. £150.

Italian Hospital, Queen-square, W.C.—Officer-in-Charge of the X Ray Department

Kent, Borough of Bromley.—M.O.H. £750.

Kirkburton, Storthes Hall Asylum, near Huddersfield.—Asst. M.O. £400.

Leeds General Infirmary.—M.O. £100.

Loughborough and District General Hospital and Dispensary.—Res. H.S. £200.

Macclesfield, Cheshire County Asylum, Parkside.—Asst. M.O. £350.

Manchester Children's Hospital, Pendlebury, near Manchester.—Res. M.O. £150. Also Asst. S. £50.

Manchester Royal Infirmary.—H.S. to Special Departments. £50. Also Jun. Asst. £100.

Metropolitan Hospital, Kingsland-road, E.—Asst. P.

Newark Hospital and Dispensary.—Res. H.S. £200.

Newcastle-upon-Tyne, Hospital for Sick Children.—Hon. Asst. P.

Nottingham General Hospital.—H.P. £200.

Paddington Green Children's Hospital, London, W.—P. to Skin Dept. and P. to Out-patients.

Plymouth, South Devon and East Cornwall Hospital.—H.P. £150.

Queen Charlotte's Lying-in Hospital, Marylebone-road, N.W.—Obst. S.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Res. M.O. £200. H.S. £100. Also Ophth. S.

Queen Mary's Hospital for the East End, Stratford, E.—H.S. Also Hon. Ophth. S.

Reading, Royal Berkshire Hospital.—Second H.S. £200.

Royal Dental Hospital of London.—Asst. Dental S. Also Asst. Hon. Radiographer.

St. Mary's Hospital, Paddington, W.—Electro-therapeutic O.

Sheffield Royal Infirmary.—Asst. Cas. O. £150.

Singapore, Straits Settlements.—Asst. Principal of Medical School. $600 per month.

Stannington (Northumberland) Children's Sanatorium.—Female Res. M.O. £250.

Stoke-on-Trent and Stoke Rural Joint Hospital Board.—Res. M.O. £500.

Swansea General and Eye Hospital.—H.S. £200.

University of London.—External Examiners.

West Bromwich and District Hospital.—Res. Asst. H.S. £200.

West Riding County Council.—Dist. Tuberc. O.'s. £600. Asst. M.O. (Res.). £325. Sch. Oculist. £600. Sch. Med. Inspectors. £500.

THE Secretary of State for the Home Department gives notice of a vacancy for an Ophthalmic Specialist Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 4, which comprises the Bacup and Rawtenstall, Blackburn and Darwen, Blackpool and Fleetwood, Clitheroe, Garstang, Haslingden and Accrington, Kirkham, Preston and Chorley, and Lancaster County Courts. Applications for the post should be addressed to the Private Secretary, Home Office, and should reach him not later than Feb. 16th, 1921.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Portadown, Strichen, Bridge of Weir, and Kilmacolm.

Births, Marriages, and Deaths.

BIRTHS.

ATTLEE.—On Jan. 24th, at High-street, Eton, the wife of Dr. W. Attlee, of a daughter.

BURNFORD.—On Jan. 18th, at Devonshire-place, W., the wife of Dr. Julius Burnford, of a son.

CRAW.—On Jan. 19th, at Northwich, the wife of J. W. Craw, M.B., Ch.B., of a daughter.

GASKELL.—On Jan. 19th, at Nottingham-place, W., the wife of H. S. Gaskell, M.B., Ch.B., of a son.

WATSON.—On Jan. 18th, at High-street, Sheerness, the wife of Dr. F. H. Watson, of a son.

MARRIAGES.

BAIRD—CLARKE.—On Jan. 17th, Lieutenant-Colonel R. F. Baird, I.M.S., to Gladys, youngest daughter of the late Richard Clarke and of Mrs. Clarke, of Bexhill.

MYATT—DOHERTY.—On the 26th January, at St. James's, Spanish-place, London, W. J. Myatt, of Barnt Green, Worcestershire, and London, to Dr. Agatha Doherty, of 27, Nottingham-place, London, W. 1, and formerly of Toronto, Canada.

DEATHS.

COONEY.—On Jan. 24th, at The Gables, Kingfield, Woking, John Edwin Cooney, L.R.C.P., L.R.F.P.S., L.S.A., D.P.H. Camb., aged 65.

DIMMOCK.—On Jan. 23rd, Lieutenant-Colonel Henry Peers Dimmock, O.B.E., I.M.S. (ret.).

YELLOWLEES.—On Jan. 19th, at Grangeneuk, Fountainhall-road, Edinburgh, David Yellowlees, M.D., LL.D., in his 85th year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

Thursday, Feb. 3rd.

OCCASIONAL LECTURE: at 5.30 P.M.
Professor Frederick Hobday: Some Remarks on the Diseases of Animals Contagious to Man (with epidiascope).

MEETINGS OF SECTIONS.

Tuesday, Feb. 1st.

SECTION OF SURGERY: SUBSECTION OF ORTHOPÆDICS: at 5.30 P.M. (Cases at 5 P.M.)
Cases:
Mr. P. B. Roth: Case of G.S.W. of the Elbow.
Mr. Whitchurch Howell: Case of Dislocation of the Hip and Other Deformities.
Other cases will be shown.
At 6 P.M., Dr. G. Murray Levick will give a demonstration on the Reactions and Electrical Treatment of the Intrinsic Muscles of the Foot.
ELECTRO-THERAPEUTICS.—Members of this Section are cordially invited.

SECTION OF PATHOLOGY: at 8.30 P.M., in the Pathological Laboratory of University College Hospital Medical School.
Dr. Penfield: The Golgi Apparatus in Nerve Cells with Special Reference to the Change in Chromatolysis.
Mr. Barrington: Fungus Parasite in Kidney of Rabbit.
Dr. Walshe: A Case of Encephalitis Lethargica.
Dr. Lewis: Laboratory Demonstrations.
Mr. T. W. P. Lawrence: Pathological Specimen.
Professor Boycott: Hypertrophy of Hæmoglobin.

Wednesday, Feb. 2nd.

SECTION OF SURGERY: at 5.30 P.M. (Cases at 5 P.M.)
Cases and Radiographs:
Mr. Gilbert Chubb: Cases and Radiographs illustrating the Technique Employed, and Results Obtained, in the Repair of Fractured Mandible by means of the Free Autogenous Bone-graft.
Paper:
Mr. G. L. Edington: Meckel's Diverticulum as a cause of Intestinal Obstruction.

Thursday, Feb. 3rd.

SECTION OF OBSTETRICS AND GYNÆCOLOGY: at 8 P.M.
A SPECIAL GENERAL MEETING will be held immediately before the ordinary monthly meeting of the Section to consider, and, if approved, confirm, the following alteration in the laws of the Section—viz., that Paragraph 2, Chapter VI. of the laws be amended to read:—
That the President shall hold office for one year only, and, except by special resolution of the Section, shall be ineligible for re-election.
Short Communication:
Mr. F. C. Pybus: An Unusual Type of a Tuberculous Peritubal Cyst.
Paper:
Dr. T. Watts Eden and Mr. F. Lionel Provis: X Ray Treatment of Uterine Fibroids and Chronic Metritis, with a Record of 76 Cases.
The following have promised to take part in the discussion:—
Dr. Louisa Martindale, Dr. Finzi, and Dr. Gilbert Scott.

Friday, Feb. 4th.

SECTION OF LARYNGOLOGY: at 4 P.M.
Epidiascope Demonstrations will be given by—
The President (Dr. Jobson Horne) and Dr. Irwin Moore.
Cases will be shown by—
Dr. Norman Patterson (two), Dr. Dan McKenzie, and others.
A Report on Two Fatal Cases of Tonsillectomy will be given by Dr. McLeod.

SECTION OF ANÆSTHETICS: at 8.30 P.M.
Paper:
Dr. Rowbotham and Dr. Ivan Magill: Anæsthesia in the Plastic Surgery of the Face and Jaws.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.
MONDAY, Jan. 31st.—5 P.M., Hunterian Lecture:—Prof. W. S. Handley: The Pathology and Surgery of Lupus.
WEDNESDAY.—5 P.M., Hunterian Lecture:—Prof. W. G. Howarth: Mucocele and Pyocele of the Nasal Accessory Sinuses.
FRIDAY.—5 P.M., Hunterian Lecture:—Prof. C. W. G. Bryan: Injuries of the Diaphragm, with Special Reference to Wounds jointly involving Thoracic and Abdominal Viscera.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, Jan. 31st.—12.15 P.M., Dr. Burnford: Pathological Demonstration. 2 P.M., Dr. Simson: Diseases of Women. Dr. Morton: X Ray Department. 5 P.M., Lecture:—Dr. A. Saunders: The Digestive Disturbances of Adults.
TUESDAY.—12 noon, Mr. T. Gray: Demonstration of Fractures. 2 P.M., Dr. Pernet: Skin Department. 2.30 P.M., Mr. Addison: Visit to Medical Wards. 5 P.M., Lecture:—Dr. Burnford: Morbid Anatomy of the Digestive Tract.
WEDNESDAY.—11 A.M., Mr. MacDonald: Demonstration of Cystoscopy. 2 P.M., Mr. Addison: Operations. Mr. Gibb: Eye Department. 5 P.M., Lecture:—Mr. D. Armour: Physical Signs and Diagnosis of Abdominal Tumours.
THURSDAY.—2 P.M., Mr. Baldwin: Orthopædic Department. Mr. B. Harman: Eye Department. Dr. Grainger Stewart: Medical Out-patients. 5 P.M., Special Lecture:—Dr. T. S. P. Strangeways: Rheumatoid Arthritis (open to all medical practitioners).
FRIDAY.—9.30 A.M., Dr. Grainger Stewart: Neurological Demonstration. 10 A.M., Dr. McDougal: Electrical Department. 2 P.M., Mr. Banks Davis: Disorders of the Throat, Nose, and Ear. 5 P.M., Lecture:—Mr. Baldwin: Appendicitis. (II.)
SATURDAY.—10 A.M., Dr. A. Saunders: Medical Diseases of Children. 12 noon, Mr. Sinclair: Surgical Diseases of the Abdomen. 2 P.M., Dr. Owen. Medical Out-patients.
Daily:—10 A.M. Ward Visits. 2 P.M., In-patient, Out-patient Clinics and Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, Jan. 31st.—10 A.M., Mr. W. E. Tanner: Surgical Out-patients. 2 P.M., Dr. A. J. Whiting: Medical Wards. 2.30 P.M., Mr. E. Gillespie: Surgical Operations. Mr. J. B. Bannister: Gynæcological Out-patients. Dr. J. B. Alexander: Medical Out-patients. 4.30 P.M., Clinical Demonstration:—Mr. W. E. Tanner: Selected Surgical Cases. 6 P.M., Dr. F. L. Provis and Mr. T. H. C. Benians: Venereal Department.
TUESDAY.—9.45 A.M., Lieut.-Col. R. H. Elliot and Mr. N. Fleming: Eye Operations. 2.30 P.M., Mr. H. W. Carson: Surgical Operations. Mr. C. H. Hayton: Diseases of the Throat, Nose, and Ear. Dr. Metcalfe: X Ray Department. 3 P.M., Clinical Demonstration:—Mr. C. H. Hayton: Cases of Vincent's Angina. 5.30 P.M., Dr. C. E. Sundell: Children In-patients.
WEDNESDAY.—2 P.M., Mr. C. H. Hayton: Throat Operations. 2.30 P.M., Dr. W. J. Oliver: Skin Department. Dr. J. B. Alexander: Medical Out-patients. Clinical Demonstration:—4.30 P.M., Dr. J. B. Alexander: Cases Illustrating Thyroid Insufficiency. 5 P.M., Dr. Provis and Mr. Benians: Venereal Department.
THURSDAY.—2.30 P.M., Mr. N. Fleming: Eye Out-patients. Dr. A. J. Whiting: Medical Out-patients. Mr. H. W. Carson: Surgical Out-patients. Mr. J. B. Bannister: Gynæcological Operations. Dr. J. Metcalfe: X Ray Department. 3 P.M., Clinical Demonstration:—Mr. H. W. Carson: Selected Surgical Cases.
FRIDAY.—2 P.M., Mr. Howell Evans: Surgical Operations. 2.30 P.M., Dr. C. E. Sundell: Children Out-patients. Mr. E. Gillespie: Surgical Out-patients. 3 P.M., Clinical Demonstration:—Mr. E. Gillespie: Cases of Surgical Interest. 5 P.M., Dr. Provis and Mr. Benians: Venereal Department.
SATURDAY.—3 P.M., Mr. H. W. Carson: Surgical Wards.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, Feb. 3rd.—4 P.M., Lecture:—Dr. W. J. Pearson: The Premature Child.

MIDDLESEX HOSPITAL MEDICAL SCHOOL (UNIVERSITY OF LONDON).
TUESDAY, Feb. 1st.—3 P.M., Emeritus Lecture:—Surg.-Rear-Admiral Bassett-Smith: Mediterranean Fever.
THURSDAY.—3 P.M., Emeritus Lecture:—Surg.-Rear-Admiral Bassett-Smith: Malaria.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, W.
MONDAY, Jan. 31st.—5.30 P.M., Post-Graduate Lecture:—Dr. S. Goodall: Cardio-analysis.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square, W.
Post-Graduate Course on Infant and Child Welfare.
TUESDAY, Feb. 1st.—10.30 A.M., Dr. E. Pritchard: Practical Demonstrations on the Management and Feeding of Infants and Young Children—Demonstration V., The Artificial Feeding of Infants.
THURSDAY.—3 P.M., Demonstration VI., The Modification of Milk.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.
THURSDAY, Feb. 3rd.—6 P.M., Chesterfield Lecture:—Dr. W. Griffith: Parasitic Diseases of the Skin.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.
FRIDAY, Feb. 4th.—9 P.M., Lecture:—Prof. A. D. Waller: The Electrical Expression of Human Emotion.

ROYAL SANITARY INSTITUTE, 90, Buckingham Palace-road, S.W.
MONDAY, Jan. 31st.—5.30 P.M., Prof. H. R. Kenwood: Introductory Lecture to Students attending the Several Courses of Instruction at this Institute.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE CLINIC.
TUESDAY, Feb. 1st.—4.30 P.M., Lecture:—Mr. C. Roberts: Treatment of Hernias.

SALFORD ROYAL HOSPITAL AND ANCOATS HOSPITAL POST-GRADUATE DEMONSTRATIONS, at the two Hospitals alternately.
THURSDAY, Feb. 3rd.—4.30 P.M., Mr. Jefferson: Gall-stones. (At Salford Royal Hospital.)

ST. MARY'S HOSPITALS, MANCHESTER, POST-GRADUATE LECTURE, at Whitworth-street West Branch.
FRIDAY, Feb. 4th.—4.30 P.M., Dr. Fothergill: The Interpretation of Physical Signs in Abdominopelvic Surgery.

MANCHESTER BABIES' HOSPITAL.
Post-Graduate Lectures and Demonstrations in the Onward Buildings, Deansgate, or at the Hospital, Slade-lane.
SATURDAY, Feb. 5th.—3.30 P.M., Dr. Chisholm: The Treatment of the Premature Child. (At Onward Buildings.)

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Notes, Short Comments, and Answers to Correspondents.

THE DISPENSARY, THE SANATORIUM, AND THE TUBERCULOSIS OFFICER.

THE WEAK LINKS IN A CHAIN.

BY P. C. VARRIER-JONES, M.A., M.R.C.S., L.R.C.P. LOND.,
AND
SIR G. SIMS WOODHEAD, K.B.E., M.D., LL.D.

IN our notes on experiences of colony treatment and "after-care" of tuberculous patients we have, through the courtesy of the Editor of THE LANCET, been able to bring to the notice of our fellow workers our views concerning the solution of the tuberculosis problem as it now presents itself. After close and prolonged study of the position, with due attention to the experience of our predecessors, we definitely conclude that it is impossible to keep different types of tuberculosis in different institutions, and that in the attempt to do so a fundamental error has been committed. In the medical text-book there usually occurs some bald and emphatic statement to the effect that "sanatoriums are institutions for the treatment of early cases of consumption"; upon this basis is founded the whole "sanatorium benefit" of the National Insurance Act; but we are glad to see it is no longer the text and argument on which the most recent report of the principal medical officer of the Ministry of Health is based.

Sanatoriums Intended for Early Cases.

The patient with arrested tuberculosis is able to work at a suitable occupation, and is better mentally, morally, and physically for so doing, but to prevent recurrence of his disease strict limits must be set upon both his work and his play. It is difficult to believe that the contention now generally accepted should have as its basis mere suggestion or hypothesis; but can we find any evidence that it has or ever had any sure basis of observation, experience, or statistics? The understanding that sanatoriums are for the reception of early cases has been firmly impressed on the lay public, and even now it receives lip service, not only from most medical officers of health with whom we have come in contact, but from many tuberculosis officers and superintendents of sanatoriums. But in conversation these men—those abroad as well as those at home—generally make some such further statement as "sanatoriums are *meant* for early cases, but we do not get them; we must therefore do the best we can with the patients that come to hand. We are playing a losing game, but after all, our work is to look after the institution." In other words, it is sought to bend the patient to the system, and not to devise a system that will benefit the patient.

Sanatoriums as Hospitals.

At the dispensaries some attempt may be made to sort out so-called early cases, but very few come under the observation of the tuberculosis officer, and so many middle cases are in such urgent need of treatment that sanatoriums receive very few early cases. The various "public" and "municipal" sanatoriums are practically monopolised by middle and advanced cases, many of which latter are only sent to hospital or home to die. The misreading of the very unsatisfactory statistics published is due to the presence of these cases in sanatoriums; which fact also affords some explanation of the little provision made for the reception and treatment of these more advanced cases. In sanatoriums where high fees are paid some attempt has been made to return to hospital those who are not in an early stage of the disease, but even here the desire to help those in a more advanced stage usually overcomes the discretion of the medical officer. Conditions under which early cases were to be treated have gradually been adapted to treatment of more advanced cases, and the sanatorium has become a hospital for incurables. Indeed, one medical officer of a sanatorium recently declared that he had to run it as a hospital. This state of affairs probably holds in "public" and "municipal" sanatoriums rather than in private institutions, where numerous patients can afford to live for years, and if a breakdown occurs sometimes to return for a further stay. The working man, however, is sent to a sanatorium only when he can work no longer, and then for a period of from three to six months, during which time he undoubtedly improves; only too frequently to break down again later.

False Value of Statistics.

The statement is often made that unless the sanatorium can be filled with early cases statistics must suffer. But statistics are already practically valueless with reference to early cases. The patients must not suffer because of the desire of some enthusiasts to obtain apparently good results. Dispensaries and after-care committees should at present take charge of really early cases, but a short term in a sanatorium is an admirable provision to ensure the rest and sanitary or hygienic education which many of them most require. They are neither open cases nor infective, nor a danger to the community; with a short term of sanatorium treatment, with improved home surroundings, regulated work, play, and rest, many of them will do well. Some are sure to require colony treatment at a later period; they must therefore remain in touch with the dispensary, which is the best clearing-house. Dr. James Niven, medical officer of health for Manchester, has thrown the whole matter into a true perspective:—

"Much dissatisfaction is expressed with the results arrived at from sanatorium treatment, having regard to the heavy expenditure which such treatment entails. This poverty of results was anticipated in Manchester when the sanatorium movement threatened to overshadow the public health preventive aspects of the question, though it was clearly realised by those who had done practical administrative work that the success of other public health measures was dependent on the provision of a certain amount of sanatorium treatment. From the public health point of view—and the successful tuberculosis officer must be essentially a preventive man, even if he is very skilful clinically—what want of success attends sanatorium treatment is largely due to the tendency to regard sanatorium treatment as merely a field for clinical and administrative skill."

Sanatoriums are designed for the reception of early cases only, but they are seldom or never put to their proper use. We must recognise that a comparatively small number of early cases find their way into the beds provided for them; at the same time no adequate provision is made for the treatment of the more advanced cases, probably simply because we ignore the fact that although by far the greater proportion of cases of pulmonary tuberculosis are not early cases they still need special care and treatment. In this connexion a series of definite problems come up for solution.

First, we must realise that all effort will prove fruitless unless treatment and prevention advance together. This brings us to the root of the question. It is sometimes stated that the general practitioner could diagnose all early cases and bring them at once to the notice of the tuberculosis officer, and that this is the only remedy for the present unsatisfactory state of affairs; we have already pointed out[1] that the fault does not lie with the general practitioner; it is the outcome of a desire to accumulate statistics of early cases only, and of our failure to deal satisfactorily with all cases as they come before us.

Professor E. W. Hope indicates this weak spot when he asks:—

"What, for example, could be said in support of a municipal hospital intended for typhoid fever or small-pox which refused to accept any but those cases which were slight, and were unlikely to add to the mortality statistics of the hospital? After all the sanatorium must be regarded as a link in the chain of sanitation. Its usefulness must not be cramped by exclusion of the very patients who most needed care and attention. In the term "sanatorium benefit," as employed in the Insurance Acts, there were included dispensary treatment and domiciliary treatment, and grants of extra nourishment. All of those measures, however, failed in much the same way that they would fail if applied to any other form of communicable disease which fell short of dealing effectively with the centre of infection."

There now remains no excuse for ignoring the really important middle cases for whose care and treatment so little proper provision has as yet been made.

Professor Hope continues:—

"It may be asserted with absolute confidence that institutions for the reception of tuberculous patients at all stages of illness are essential for the prevention of tuberculosis, just as in the past hospitals for typhus were essential for the extinction of that disease ..... the exclusive selection of cases with a view to good sanatorium statistics and the limitation of institutional care to those is, from the preventive point of view, preposterous. The point would be made clear by a comparison with the segregation of ordinary infectious sickness."

Mr. White, a member of the Liverpool Public Health Committee, following Professor Hope, and protesting against further classification and segregation, pointed out—

"that some time ago Dr. Hope appropriated a particular hospital for advanced tubercular cases, and within six weeks the poor people of the city declined to have anything to do with it. Segregation in one ward in the institution was then tried, but the sequel was the same."

Lack of Medical Training in Treatment of Tuberculosis.

One patent reason for this want of understanding and lack of action—we speak plainly on this essential point—is that tuberculosis officers are compelled to treat what they cannot find, sometimes because they are incapable of finding it and

[1] Industrial Colonies and Village Settlements for the Consumptive, p. 86.

sometimes because it is no longer there to be found. During their medical course they have neither been taught to seek nor recognise the really early signs and symptoms of consumption, nor have they had their attention called to the proper treatment of the "middle" cases which in our large towns and cities swarm to tuberculosis dispensaries. There examination of each patient is made perhaps once a week, but the numbers prevent the possibility of more than cursory examination and palliative treatment. Under these conditions little can be done to cure a case or to isolate it and so prevent the spread of the disease. A newly appointed clinical officer, unable perhaps because of his youth to gain the confidence of the general practitioner, finds himself in an ill-defined and insecure position, faced with an extremely complex problem, compelled to work in a groove, with little experience or knowledge of prevention, or if possessing such knowledge, not allowed to use it. He often recognises that the routine work of the dispensary is bearing little or no fruit, but he is kept in a subordinate position and loses heart; his initiative is crabbed and his usefulness crippled. And so often lately has the same story been repeated to us that we do not hesitate to bring the matter under the notice of those interested.

Not only are costly sanatoriums provided for the reception of cases which do not exist, but a system of dispensary organisation has sprung up alien to the problem and therefore inadequate for its solution.

We recognise, of course, that we are again putting forward an unacceptable thesis, as when we formulated the idea of the industrial colony—as opposed to the farm colony—and its natural corollary, the village settlement. Our views upon that subject, however, have now been accepted by many as containing some germ of truth and by a few as sound and completely vindicated, whilst by those who have taken the trouble to study them they have been fairly widely adopted. Dr. W. E. Stewart, the head of the Mountain Sanatorium, Hamilton, Ontario, Canada, has written that whilst good food and fresh air are no doubt essential agents in the treatment of tuberculosis, so also are regulation of exercise and rest, freedom from anxiety, mental occupation, and content.

"Each case presents new features for consideration, and only the skilled and trained man is capable of applying the new general principles on which treatment may be successful. ..... An outdoor occupation may be preferable to an indoor one, other things being equal, but the trouble is that other things cannot and never will be made equal. If weather were always good and jobs as varied, suitable, light, and remunerative outside jobs would be chosen, but suitable indoor jobs are much more numerous."

Work for Consumptives.

The tuberculous man must learn to live the life of a consumptive, and he must be provided with permanent work. Blind-alley occupations are not for him; he must be capable of earning as much as possible to the end, for at the end he will require it most. Dr. Stewart puts the matter both tersely and forcibly thus:—

"A workman's trade is his capital, slowly acquired like a merchant's business, and to ask him to give it up is like asking the merchant to burn down his warehouse, destroy all his records, cancel all his contracts and commissions, and begin, without resources, to build up another and a different business." Further, "when a workman trained in a trade gives up that trade and begins to learn a different one the loss to the individual and the State is the same kind of loss as the burning of a factory. It is a destruction of an asset, personal and national. Teach a clerk to become a secretary, a machinist to develop into a draughtsman, make a carpenter a supervisor of work, and you are on the right lines."

The sanatorium idea was an application to the working man of the treatment of the well-to-do, without any careful study of the principles involved; similarly, the format of the dispensary was that of the physician's consulting-room. In the one case the patient can afford to take the proffered advice, but in the other no advice or persuasion will induce the working man, if he is an early case, to accept the label "consumptive," to be harassed by health visitors and sanitary inspectors, and to give up a remunerative occupation for the "open-air job" offered in exchange. At this stage, when the man is not yet dangerous to the community, sound advice as to home conditions and social life coupled with a term of rational sanatorium treatment (if he can be persuaded to accept it, and if the sanatorium is not filled with middle and advanced cases) is the most satisfactory line of procedure. So long as we adhere to the accepted inexact classification and irregular system of case grouping we can expect no larger return in the matter of prevention. We know that had we no centres of infection we should have no early cases of consumption to deal with, but our efforts to remove these centres are half-hearted. It would be impossible at once to remove all centres of infection, but we should not on that account relax our endeavours. Every tuberculosis officer and every medical superintendent of a sanatorium, now often engaged on mere routine work, should be asked to concern himself with some really constructive policy into which he can throw both mind and heart.

Difficulties of the Tuberculosis Service.

The young tuberculosis officer takes his place under an able administrative chief, in whose person are combined the function of medical officer of health, school medical officer, and chief tuberculosis officer, but who, in the very nature of things, can have little special knowledge of tuberculosis. We are told that tuberculosis touches many sides of administration, housing, sanitary questions, and the like; that these are essentially the concern of the medical officer of health, and that no alteration or variation of the scope of the latter's powers can be made with impunity. We admit that the problem is full of complexities. Medicine, sociology, economics, psychology are woven into the web of the tuberculosis question as they are into that of no other disease afflicting civilised man. As Sir Arthur Newsholme has written: "The greater part of a consumptive's life is spent at home, often under unsatisfactory conditions both for the patient and for his family, and the supervision of his home life by the tuberculosis officer and the health visitor, even when this is frequent and sympathetic, does not meet his needs. If the patient is to have the best possible prospect of recovering, and if his family are to be safeguarded against infection, he will in many cases need (*a*) improved housing, (*b*) occupation adapted to his physical capacity, &c., &c., (*c*) the family income will need to be supplemented. These requirements have not hitherto been met."

We would ask what chance is there of these conditions being met under our present dispensary system? The dispensary medical officer—probably well trained in ordinary clinical diagnosis and treatment, but with little knowledge of consumption and the consumptive, bound by the rules of an inelastic service, subservient to a chief whose duties prevent any practical contact with him—is discouraged and hampered on all hands. We say the system is wrong, and except in rare and notable instances a complete failure.

Dr. F. J. H. Coutts, commenting on Dr. J. E. Chapman's report,[2] corroborates Dr. Niven's contention that the tuberculosis officer too frequently approaches the tuberculosis problem from a purely clinical point of view, ignoring the wider outlook of preventive medicine; and so long as he is regarded as being in charge of a tuberculosis dispensary or of a sanatorium; so long as his duties consist merely in making so many visits, attending so many hours, and providing such-and-such statistics; so long as he is not expected to show any initiative or devise plans and methods of general treatment; so long must he be simply an appanage to the public health department. Moreover, it must be recognised that some tuberculosis officers never had any opportunity of acquiring either the necessary administrative experience or the requisite special knowledge or technical skill before they were called upon to take up their special work.

Tuberculous patients cannot be classified and labelled "Stage 1," "Stage 2," or "Stage 3," and so left. Little progress can be made until the system, or lack of system, now in vogue is altered, and the hand of officialdom is removed. The motive power at present must be applied from below by personal endeavour and original research, for in many areas rules and regulations are alone considered necessary. We are glad to see that in the most recent report of the principal medical officer of the Ministry of Health this outlook is disavowed and discouraged.

Improvements Necessary for Advancement.

Writing from time to time on the colony system for the treatment and prevention of pulmonary tuberculosis, we have always insisted that it can be but part of a larger whole. Speaking generally, we have been astounded to find how stereotyped and even discredited methods have been allowed to assume sway even in a new medical service. Sir Henry Gauvain's message quoted in the *Times* report of the Liverpool Conference of the National Association for the Prevention of Tuberculosis should give us pause: "Our army is ill-trained, ill-equipped, ill-organised, lacking in leaders with full powers to act." The head of the tuberculosis department should not be hampered by too varied duties or enmeshed in red tape; he should possess more than knowledge which at the worst is incomplete and at the best can be obtained only secondhand; and he should have ample time and facilities to study experiments, observations, or publications bearing on his own work. He should also be able to advise, direct, and superintend a really virile attack against the disease. Nothing effective can be done when, as in many instances, the elements of knowledge and experience are lacking. The tuberculosis officer cannot perform his duties even passably well unless he possesses a real working knowledge of (1) the extent to which treatment of patients in their own homes is beneficial; (2) how far work (which is a therapeutic measure) can be arranged for, either in a borough or county area; (3) the economics of the problem; (4) the home conditions of the people and the relation of these to questions of infection; (5) workshop and factory

[2] Annual Report of the Chief Medical Officer to the Ministry of Health for 1919-20, p. 149.

conditions; (6) hours of toil and industrial fatigue—in short, a knowledge of the whole complex of conditions involved in the medical, social, and psychological study of the disease.

Few tuberculosis officers have been encouraged to apply themselves to these various studies, and few are able to supply information, even on the most important matters concerning their patients. These are faults of the system under which they work, coupled with the lack (except in one or two specially favoured schools) of training of medical men in the diagnosis and treatment of tuberculosis. The tuberculosis officer struggles on with mere routine examination of chests, seeking early cases, missing some, labelling others; the latter, whatever their stage, are passed through the same routine treatment of a few months' residence at a so-called sanatorium, which is very often an annexe of an infectious diseases hospital or some similar makeshift. His work is judged almost entirely by the number of examinations he makes, for the figures he provides help to make impressive the annual report.

Weaknesses of the Dispensary System.

Work is being done, but that this work is productive of little good seems beside the question. The Ministry of Health has laid it down that patients must be seen and treated at a dispensary. The tuberculosis officer must continue to examine and report. How greatly would it benefit the patient and the community if the tuberculosis officer were encouraged to deal with a case thoroughly, and to offer the consumptive an opportunity to lead a reasonable life, doing his 30 per cent. or 50 per cent. of work under conditions in which the danger of infection to others had been eliminated or reduced to a minimum.

The expert knowledge which the tuberculosis physician should possess might then be utilised to its fullest extent; constructive work would occupy his thoughts and energies. The value and results of medical examination of patients and contacts would be increased a hundredfold. The full return for medical advice would be obtained, for the patient would have the opportunity to benefit by it. What action is possible in the case when patients are passed through the dispensary at the speeds of which we constantly hear? Can we wonder that the dispensary system runs a danger of being set down as a gigantic failure?

A mere examination, a mere visit of the tuberculosis officer to a patient's home, can neither ensure treatment nor prevent the spread of disease. Not only in counties but in county boroughs the death-rate from tuberculosis and the number of notifications have failed of late to decrease as they should despite the recent advances of medical science; yet the old routine is adopted or still followed. The tuberculosis dispensary is apt to become a field for little more that a poor-class panel practice devoted entirely to tuberculosis—an out-patient department, stocked with drugs which are mostly placebos, or an annexe of an office for the compilation of statistics. Such was not, as we read it, Sir Robert Philip's idea and plan of the dispensary system, which appears to have degenerated into its present hide-bound condition, with a personnel isolated and of no importance in a scheme in which it should form a central pivot. The dispensary officer, the sanatorium physician, and in some localities the colony superintendent, are kept in their little compartments; there is no expert head, for the medical officer of health of any large area has obviously neither the time nor the special training to enable him to assume the control of a complete tuberculosis scheme.

Conclusion.

When we see the immediate and satisfactory results obtained in the industrial colony and by the after-care system, and have practical demonstration of their smooth working and adaptability to the existing problem; when we recognise the widespread desire to copy the system and put it into practice in areas other than Cambridge, we are compelled to conclude that there is still much to be done before the treatment of the tuberculous patient is satisfactory. It was anticipated that sanatorium benefit was about to be handed over by the Insurance Committee to the public health authorities, and that a thorough transformation might be possible; but the opportunity has been allowed to go by, for the present at any rate, but let us hope that we may not be compelled to pass through a further period of inaction and of abject failure to stem the progress of tuberculosis.

LIFT ACCIDENTS IN PARIS.

THE large and increasing number of accidents in Paris lifts was the subject of a report recently by M. Walckenaer, the Inspector-General of Mines.[1] The report covers the period 1905–1919 in which there occurred no less than 94 accidents, of which 37 were fatal. The numbers of accidents in 5-year periods were 22, 32, and 40. More than half the accidents were due to crushing between the framework of the lift and one of the floors or ceilings of the building. It is recommended that automatic stoppage should be enforced, so that whenever the lift door is open no movement is possible. This device would have prevented the greater number of the accidents, but in order to enforce its adoption it will be necessary to exclude all lifts not worked by electricity.

[1] Compt. Rend. des Séances du Conseil d'Hyg. Pub. et de Salub. du départ. d. l. Seine. 1920. No. 24. P. 483.

EARLY CARCINOMA OF THE BREAST: A QUERY.

F.R.C.S. writes: In works on surgery written about 1850 and also since, references are given to a case of very early carcinoma of the breast in a child, and in every case the reference is the same: "Lyford, LANCET, vol. xii., p. 332." Unfortunately, no account of this can be found in the place indicated. Also another reference is made to a case of early carcinoma reported by "R. Carmichael": in this case no book is mentioned. I shall be greatly obliged if any of your readers can give me the correct references to these two cases.

A. A. D.—We have not before us the circumstance which has led to the indignant communication. The Registrar keeps the official Register of qualified medical practitioners. The purpose of the Register is to enable the public to discriminate between those who are and those who are not qualified. If the Registrar is not informed of the address of a member of the medical profession, after due preliminaries the name must be removed. For, obviously, if the Council are not aware of the continued existence of the practitioner, to allow his name to remain on the official list is to invite impersonation, by which the public would be swindled.

Communications, Letters, &c., to the Editor have been received from—

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T.—Prof. J. M. Taylor, Philadelphia; Dr. H. M. Turnbull, Lond.; Dr. J. V. G. Tighe Stannington.

V.—Mrs. E. Valentine, Norwich.

W.—Dr. A. J. Whiting, Lond.; Women's Union for Peace, Bromley, Hon. Sec. of; Dr. W. H. Willcox, Lond.; Mr. R. Whitelaw, Aberdeen; Dr. J. D. Wynne, Norwich; Dr. E. W. A. Walker, Oxford; West London Medico-Chirurgical Society, Hon. Sec. of; Mr. A. J. Walton, Lond.

Z.—Dr. S. S. Zilva, Lond.